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RICHARD P. ROTHWELL, C. E. M. E., Editor.

ROSSITER W. RAYMOND, Ph. D., M. E., Special Contributor.

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The establishment of a large electrical power plant, to be run by gas engines and to utilize the surplus gases from the by-product coke ovens, at Dunbar, Pa., has been proposed, and there is no reason why it could not profitably be done in a district where there is a demand for power. The suggestion is worth serious consideration from coke-makers elsewhere. Power, considered as a by-product of the coke-oven, may in many cases be an important and profitable one.

Our Californian contemporary, the "Los Angeles Mining Review," finds fault with us, and we are obliged to confess that it has some grounds for complaint, because we gave credit to the "Mining and Metallurgical Journal," also published at Los Angeles, as the source of our information concerning the Stephens process. We are exceedingly sorry for this mistake, of which we were inadvertently guilty, and we make haste to tender a thousand apologies to the "Los Angeles Mining Review." We are quite ready to give it all the credit it can desire for fathering the Stephens process, to which we shall revert in an early issue. We desire also to tender our apologies to the Los Angeles "Mining and Metallurgical Journal" for imputing to it, even inferentially, any serious attention to the Stephens process.

Gold production from the Witwatersrand Mines, which has been increasing steadily all through the year, made a marked gain in October, reaching a total of 400,791 crude ounces, equal, at the usual values for Transvaal gold, to 328,648 fine ounces, or $6,793,154. This is considerably the largest output ever reported in one month; it is nearly one-half more than last year, and twice that of October, 1896. A notable feature of the production is that about 23 per cent. of the total—92,500 crude ounces—came from the new deep-level mines, of which nine are now in the producing list.

For the ten months ending with October the output of the Witwatersrand was 3,482,788 crude ounces; while the total production of the Transvaal was 3,700,818 crude ounces, equal to 3,034,671 fine ounces, or $62,726,649. This report points to a total for 1898 not far from $75,000,000, which will beyond question put the Transvaal at the head of the list of world's gold producers. The production of the United States has declined rather than increased.

We recently referred to the gold deposits of Indiana and the preparations for working them. The gold fever in the Central West seems to be contagious, though somewhat intermittent in its outbreaks, and is now raging in Carroll County, Ohio, where "gold ore assaying $60 a ton" has been struck in digging a well—the usual method, by the way. It is represented that prospectors have already taken leases on "several thousand acres," and are busily engaged in sinking shafts. Fortunately it is a slack time in farming, and no great harm will be done, provided the diggers get through—as they probably will—before it is time to begin the spring plowing.

Another outbreak has occurred near Steubenville, in Ohio, where a discovery was made in Athletic Park, and "particles of gold dust and gold quartz" were panned out by the finder. Here, however, a damper has been put on the excitement by an unfeeling citizen, who was in charge of some coke ovens which formerly stood on the ground in question, and now claims that the "gold dust" is nothing but pyrites washed out of the coal when the ovens were at work. He is probably right, but he should have hesitated before spoiling the prospects of the new goldfield so quickly.

The electrical journals are now discussing an important subject, which has been heretofore referrred to, but has received less attention than it deserves. This is the action of the electrical currents set free, especially by electric railroad lines, on iron pipes and other metal constructions underground. It has been found that in many cases a strong electrolytic action occurs which is exceedingly injurious to water and gas pipes, and even to the rails of the electric lines. Serious corrosion often results, and frequent renewals are required. In a survey recently made in New York it was found that this action is not to be feared in those cases where a closed conduit with proper return connection is used; but it is very strong with the open trolley wire and ground return. Attention was first directed to the action on water pipes, we believe, by the New England Water Works Association some years ago, but the matter was not actively taken up by others until recently.

This is a point which ought to be carefully considered in mining plants, where the conditions would seem especially favorable to the electrolytic action mentioned, unless proper precautions are taken. There is little doubt, apparently, that injurious results can be prevented; but if the matter is neglected trouble is very apt to follow.

The admission of copper and copper matte free of duty is a plain provision of the present tariff, as it was in that of 1894; but it has required an appeal to the Board of General Appraisers and a decision of that board to establish this in the case of matte received by rail from Mexico.

The question arose over certain shipments made to the Philadelphia Smelting and Refining Company, which were assessed for duty as "lead-bearing ore" by the collector at Denver, under instructions from the Treasury Department. These standing orders, it appears, are very strict as to the levying of duty on any proportion, however small, of lead contained. The protest of the importer to the effect that copper regulus or matte could not in any sense be called a "lead-bearing ore," was set aside; but on appeal it has now been sustained, and the rule established that copper mattes are not lead ore within the meaning of the present law, and may consequently enter free of duty.

This decision is of considerable importance, in view of the quantity of copper matte which now comes to this country to be refined, and which is expected to increase largely in the future, as developments proceed in the Mexican copper mines.

WHO SWINDLE THE BRITISH INVESTING PUBLIC?

The Lord Chief Justice of England, on receiving the new Lord Mayor at the Law Courts in London the other day, took the opportunity of reading the Mayor and city fathers a timely homily on the evils of fraudulent company promotion. This theme is of perennial interest in the city of London, and though the abuses flourish most rampantly among mining companies, we often find flagrant examples of swindling in branches connected more intimately with English domestic industries. The "Engineering and Mining Journal" has on occasions joined with the better class of the English press in denouncing generally and specifically the wrongdoings of promoters, directors and managers of public companies, and nothing was said by the Lord Chief Justice which has not been said time and again by these outspoken guardians of the public interests. The value of his remarks, however, lies in the fact that they were made by him, and on the occasion of Lord Mayor's Day. It is to be hoped, therefore, that they will bear fruit.

There are, however, two points which we may enter somewhat into an opposition to the view taken by the Lord Chief Justice. His remarks consisted chiefly in a denunciation of promoters in general, with a recommendation that promoters of shady repute should be ostracised in the city, and in a plea for more stringent company laws. As regards his first point, it is not the promoter alone who should be blamed for fraudulent flotations. If it were not for the lawyers, stockbrokers and accountants who lend their services for extra big fees to the shady promoter, no rotten company would ever be floated. Among these three classes, and among bankers as well, there are hosts of men who hold high and honorable positions in the esteem of their fellow citizens. They hold their heads high with conscious rectitude in the city, and on Sundays they pass the collection bags at the church. Yet they will consent to draw up tricky articles of association if they are lawyers; they will recommend the shares to their clients if they are stockbrokers, and they will so present the accounts as to be misleading if they are accountants; and they will conduct queer financial operations if they are bankers—provided always, in all cases, that they get sufficiently well paid for their services. They have graduated scales of charges and commissions, and the greater the swindle the higher the rate. If a nominal vendor gets £100,000 as purchase price for a mine, we can always expect that the lawyers, brokers, auditors and bankers get £70,000 of it. So really these four classes should be included with the promoter when denunciations are scattered abroad.

As regards the second point, that of increasing the stringency of the law, we do not think that any general revision of English company law is required. In a few specific points improvements might be introduced, but we have always thought that ordinary common law is quite sufficient, if it were only put into force more energetically by the police and the public prosecutor.

BOLIVIAN TIN AND THE SUPPLY OF THE UNITED STATES.

With the development of the tin-plate industry in the United States, dating from 1891, the importation of block tin has been increasing materially. In 1890 our imports amounted to 16,910 short tons, previous to which they had been ranging from 15,000 to 17,500 tons a year. In 1891 the amount rose to 20,573, and since that time the annual importation has been in excess of 20,000 tons, attaining a maximum of 27,586 in 1897. For the nine months ending with September, 1898, it was 24,941 short tons. Part of this supply is obtained directly from the East Indies (British and Dutch); a much smaller part from Cornwall and from Australia, but a large part is obtained, not directly from the countries where it is produced, but by the way of the Netherlands and the United Kingdom. In 1897 we imported directly from the Straits Settlements and Australia only 16,044 short tons out of our total importation of 27,586, and in the previous year the corresponding amounts were 10,290 and 22,320 tons. For the nine months of the current year to September 30th 16,266 short tons were imported directly from the East Indies; 604 tons from other Eastern countries, and 151 tons from other countries. The remaining 7,920 tons, or 31.8 per cent. of the whole, came to us from the United Kingdom and Holland. It seems surprising that we are content to receive so large a part of our supply of the metal in a roundabout way; but it is readily accounted for by the fact that at Singapore and Batavia there is always plenty of freight room to be had for London and Amsterdam, while direct for United States ports is often not to be had at all. Usually, however, direct freights are a little cheaper.

In discussing this subject the question also arises as to why Bolivian tin, which now cuts some figure in the European market, is not brought here directly. According to "The Mineral Industry," Volume VI., the total arrivals in England and on the Continent from Bolivia in 1896 were 4,039 long tons and 5,506 in 1897. In reply to an inquiry as to a market for this material in New York a leading firm of metal brokers stated that if bar tin were shipped with a reliable assay and guarantee (or if the shippers should send a sample, with a guarantee that it would properly represent the consignment) there is no doubt that such metal could be sold here. It would be doubtful if it could be disposed of in any other manner, except by shippers taking the risk of sending it here on consignment, because Bolivian tin has no regular market value like Straits or Australian tin.

Commenting upon this Mr. Santiago Pascoe of Potosi, Bolivia, in whose behalf the inquiry was made, wrote "it is very well known that Bolivian tin is inferior to that from the Straits Settlements. Nevertheless all that is shipped to Europe is promptly taken up and dealers in Bolivia are able to draw against the invoices of shipments from Antofagasta. It is always understood that the price is a certain percentage less than that quoted for Straits tin, but a Bolivian dealer shipping to Hamburg or London knows what his tin is worth the day it is put on board at Antofagasta."

This is cited as an example of the firm hold that English and German merchants have on Bolivian trade. Mr. Pascoe mentions that a part of Bolivia's commerce is with New York, but it is limited to what is absolutely necessary, and this will continue to be the case until some change is made respecting exchange, banking facilities, etc. Certainly it appears somewhat astonishing that America, after establishing a flourishing tin-plate industry, does not look for the raw material to its original sources. Both England and Germany smelt a good deal of black tin that they import from abroad. There is obviously no reason why a similar business should not be carried on successfully at New York, and it is gratifying to know that there is some prospect that a project of this kind will be undertaken before long.

THE STEEL SITUATION.

We referred in the "Engineering and Mining Journal" of November 12th to the proposed combination of the steel rail mills, under a plan by which the rail business was to be placed in the hands of a central agency. This agency, which was to be known as the American or the Standard Steel Company was to make all sales and contracts and to apportion the work to the several mills as might seem most advantageous. It would, of course, be able to fix prices for the home trade, and would also regulate the export business.

At that time it seemed probable that the plan would be carried out and the agreement concluded. When the arrangement of the details was begun, however, the incipient combination went to pieces, the main difficulty being that which has wrecked so many previous incubating agreements—the division of the spoils. While the negotiations were private, we are informed that the Carnegie Company refused to be bound as to its export orders, and finally that company, which had never specially favored the combination, withdrew altogether, and the whole affair was, of course, at an end.

It is now reported that a temporary agreement at least has been concluded, and that, while no formal pool will be formed, prices will be maintained by general understanding. It is very probable that such an announcement will be made, in order to avert a drop in Federal Steel stock; but the fact remains that the Carnegie Company retains an entirely independent position, and can act as it considers best for its own interests. This is the position to which the managers of that company have always inclined, and for which they have been preparing through years of intelligent work steadily directed toward a well-considered end.

While there is no present reason for such active competition as would result in cutting prices, since all the mills have abundant work, it is easy to see that the steel trade has been brought into such shape that on occasion a conflict might arise between the two chief interests, which would be the greatest contest of the kind in our industrial history. Both interests control not only extensive works, but also their own sup-

plies of materials from ore and fuel up; both largely control also their transportation, and can supply themselves with all the necessities of their operations at cost. The Carnegie Company has the more compact organization and the latest and best designed plants. A very large part of its works and machinery are new and of the latest design, and it has no outside organizations to support with the exception of the H. C. Frick Coke Company, which supplies its fuel, and the Oliver Iron (mining) Company, which furnishes the iron ore. Its manufacturing plants are all within a small radius, and at a central point. Moreover, it has the very great advantage of reasonable capitalization. It has no bonds nor debt on which interest or dividend payments are obligatory, and its great properties are represented by only $25,000,000 capital stock—on which dividends of 20 per cent. were earned and paid last year.

The Federal Steel Company, on the other hand, has a somewhat scattered plant, including works at South Chicago, Joliet and Milwaukee, some of which are not of the latest standard, and at Lorain, Ohio; the last named being the newest, best and most completely equipped of all. In some respects this dispersion is of advantage, since it sometimes facilitates the handling of orders; but it is not favorable to close supervision and the most economical working. It is capitalized at an enormous figure; the authorized stock is $100,000,000 common and $100,000,000 preferred, though at present the issues made amount to only $46,484,300 common and $52,767,600 preferred, or $99,251,900 in all. In addition to this the company has a bonded debt, incurred by the concerns entering into the consolidation, which amounts in all to $28,000,000, on which $1,400,000 yearly interest must be paid. If we add the interest on the preferred stock already issued, we have a total of $4,566,056, which must be earned before any dividends can be paid upon the common stock. As a considerable sum must be spent in improvements of plant and new construction, it is evident that the prospects of the common stock for dividends are extremely faint; in fact it may be said that this stock has little or no intrinsic value, for the preferred stock carries a cumulative dividend, and as it is very doubtful that it can now earn its full dividend, the account to be wiped out before the common stock can get anything may become quite large.

The apparent purpose in the organization of this company has been to make the preferred stock the only security for "investment," leaving the common stock as another industrial for Wall Street and State Street to gamble in.

There are rumors of further absorptions by the new company, and of purchases of Southern iron properties; but these are still too indefinite to deserve much comment. The indications are rather that the withdrawal of the Carnegie Company from the rail agreement has dealt the new combination a blow from which it may not recover, and a resolution into the component elements is quite as likely as any further expansion.

The Illinois Steel Company and its close ally, the Minnesota Iron Company, missed a great opportunity for controlling the trade some years ago, when they might have secured the then new Mesabi iron ore field for a comparatively small sum. The chance then passed, could never be repeated.

The steel trade is in a very interesting condition, but the pinch will not come until the present active demand begins to fall off. Then a very lively contest may be expected.

NEW PUBLICATIONS.

"The Dow Engine (Corliss Foundation)." By Josiah Dow. Philadelphia, 1898. Pamphlet, pages 36; illustrated.

This is a very clear description of the Dow engine, which is an adaptation of the Corliss gear to the needs of a high-speed compound engine, of the class for which there is now so much demand in electrical work. The inventor has simplified the Corliss gear, especially in the exhaust, and has quickened its action, while retaining some of its more essential features. The engine and governor, with the principles on which they are based, are very well described. The book is a reprint of a paper read before the Engineers' Club of Philadelphia in October last.

"Compressed Air Production; or the Theory and Practice of Air Compression." By W. L. Saunders. New York, 1898; "Compressed Air." Pages, 60; illustrated. Price, $1.

This little book is made up of a series of articles on air compressing machinery, originally published in "Compressed Air," and now brought together, completed and revised. It is what the title indicates—a statement of the theory of air compression, followed by an account of the machinery used for that purpose. The various machines devised are reviewed and compared, reasons being given for their advantages and defects. The author has had a wide experience, and very few men are better acquainted with the subject.

The use of compressed air for the transmission of power is steadily increasing in shops and mills as well as in mines. This book will therefore be convenient and useful for many engineers and managers who wish to take up its use, but have had no experience in this direction, or not enough to enable them to understand the subject thoroughly. The chapters on the principles of air compression and on those which govern the designing of compressing machinery are well and carefully written. In fact, the whole book is well condensed and evidently carefully studied out. It will be an acceptable addition to the libraries of many engineers, and will repay study.

"Gold in the Province of Quebec, Canada." By J. Obalski, Government Engineer of Mines. Quebec; published by the Department of Colonization and Mines. Pages, 88; illustrated.

Quebec is not considered usually as a gold producer; nevertheless the Province has had a total output since 1846 which is estimated by Mr. Obalski at $2,000,000. Gold has been found in placer deposits in a number of places, notably in the Chaudiere Valley, at Riviere du Loup, at Riviere des Plantes and at Riviere Gilbert. Quartz veins bearing gold have been found at Riviere du Loup and in the Beauce District. Some of these placers have yielded gold in encouraging quantities, and the present reports give photographs of several nuggets of considerable size. No extensive operations have been carried on, however, and the work done has been irregular and intermittent, with very small results. In quartz mining the most extensive operations were carried on by the De Lery Gold Mining Company, which at one time had a 10-stamp mill working at Rapide du Diable. Attempts have also been made, with varying success, to obtain gold from the black magnetic sands of Riviere des Plantes and Metgermette. From time to time concessions have been granted for mining gold, but none have been exploited except in a desultory way, as noted above. Mr. Obalski believes that there are several localities where systematic mining would pay. He has given here a careful historical account of such operations as have been carried on, accompanied by condensed accounts of the gold-bearing deposits and their location.

"The Regulation of Coal Output and Prices." By J. Stephen Jeans. London, England, 1898; the "Iron and Coal Trades Review." Pages, 38.

This is a reprint of a series of articles originally published in the "Iron and Coal Trades Review" of London as an examination of the various schemes suggested for the control of the British coal trade by a syndicate or combination. The coal trade of Great Britan has suffered to some extent—though not so much as our own—from over-production and competition with consequent low prices. At the same time the operators have had to contend with labor troubles and the demand for higher wages, supported by a powerful trades-union. A remedy suggested has been the control of the entire output by a syndicate; a measure not so visionary as it would appear to us here, owing to the greater compactness of the trade, and the very much smaller area over which the coal mines are distributed. Mr. Jeans sees clearly the difficulties in the way of this plan, and has stated them clearly and forcibly; though he does not regard them as insurmountable. He recognizes that the greatest trouble would probably be with the coal operators themselves, and that their union on any one plan would be a slow and difficult work.

It is to be noted that Mr. Jeans, who is a very good authority on the subject, gives the cost of mining coal in Great Britain at $1.20 to $1.32 per ton, and thinks that consolidation and economy in operation may possibly reduce this to $1.08 a ton. These costs would not strike our mines operators as low; they are greater than the sum which is received for much of the coal mined in this country.

BOOKS RECEIVED.

In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supercede review on another page of the Journal.

"Twelfth Annual Report of the State Mine Inspector of Missouri, for the Year Ending June 30th, 1898." Charles Evans, State Mine Inspector. Pages, 427.

"Les Mines de L'Afrique du Sud, Transvaal, Rhodesie, etc." By Albert Bordeaux. Paris, France, 1898; Vve. Ch. Dunod. Pages, 211; with 8 plates. Price, in New York, $3.15.

"Boilers and Furnaces Considered in Their Relations to Steam Engineering." By William M. Barr. Philadelphia, Pa.; J. B. Lippincott Company. Pages, 405; illustrated. Price, $3.

"New South Wales: Mineral Resources, No. 4. Notes on the Occurrence of Bismuth Ores." By J. A. Watt. Sydney, N. S. W., 1898; Government Printer. Pamphlet. Pages, 11. Price, in New York, 18c.

"New South Wales Statistical Register for 1897 and Previous Years. Part XI. Hospitals, Charities and Religion." T. A. Coghlan, Government Statistician. Sydney, N. S. W., 1898; Government Printer. Pamphlet. Pages, 36. Price, in New York, 35c.

"New South Wales: Memoirs of the Geological Survey: Palaeontology, No. 6. Descriptions of the Palaeozoic Fossils of New South Wales." By the late L. G. de Koninck. Translated from the French by T. W. Edgeworth David, Mrs. David, and W. S. Dun. Issued by direction of the Hon. Sydney Smith, M. P., Minister for Mines and Agriculture. Sydney, N. S. W., 1898; Government Printer. Pages, 298; with 24 plates.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

Calculating Value of Ore Reserves.

Sir:—In your issue of June 25th, 1898, you did me the honor to reprint part of my paper on the above subject. Will you kindly give me space to reply to certain inquiries and criticisms?

A writer in the "South African Mining Journal" takes exception to the drawing accompanying the paper, to certain remarks anent the frequency of sampling, and concludes that the method advocated is not sufficiently exact for use in his district.

In reply I have to state that the drawing, while representing in a general sense the ore-development in an actual mine, was only an index-map, or diagram, and therefore not to scale. All details were purposely cut out, the mine being a complicated one, and the intention being merely to portray the occurrence of circumscribed and isolated ore-courses, or definite ore-shoots, and the gradual change in value within a limited area of the mine. As a matter of fact, the mine was properly developed by scores of winzes at distances seldom exceeding 120 ft. and tested by thousands of samples at intervals of 3 to 15 ft.

I had hoped, by the context, that I had made it clear that I fully appreciated the fact that "the greater frequency" (with which samples are taken) "should indicate greater accuracy." That needs no demonstration. Elsewhere in my paper I tried to imply that local, commercial considerations and the general character of the ore-distribution in a mine must determine this frequency and the consequent number of sub-divisions into different grades of ore-ground. As far as I can see, the chief merit in the method of recording lies in its adaptability. You can prepare either a simple chart, or the most detailed, as circumstances and data warrant. There is no particular virtue in sampling at equal intervals, except on the score of expediency in calculating averages in a given length. No sample broken underground represents anything more than itself. The very best sampling is only an approximation to the truth. It is all very well to have theoretically perfect methods, but we must not forget their practical limitations, and I am convinced that the majority of responsible mining men will refuse to agree with my critic who asserts that one can "forecast to one shilling the average recovery from the developed ground." If in any particular district engineers are able to forecast more closely than in others it is not necessarily that their methods are more exact, but it may be Nature has been more even-handed in the distribution of the ores, and has thus made their task easier. With regard to my critic's general charge that the method advocated is not exact enough, I must confess my surprise at seeing this view advanced. However, as he takes up such a position let us see how an example works out.

Will a 2-ft. lode, assaying 12 dwts. per ton, pay if it cost £5 per fathom to mine and 6s. 6d. to mill?

Answer:—Yes; there will be moreover a profit of 5¾ dwts. per ton.

The figures obtained by direct reading of the scales, in the course of a few seconds, leading up to the above, are as follows: 1. Gross value per ton, £12 17s. 6d. 2. Inclusive cost, £6 12s. 6d. 3. Net profit, £6 5s. 4d. 4. Value per ton, £2 11s. 5. Cost per ton, £1 6s. 6. Profit per ton, £1 5s. (Error 3 1-5d. per ton on forecast of profit, and ½d. per ton on valuation.)

The foregoing gives the problem of valuation in the usual form in which it presents itself to most mining men. There are, however, special cases, and perhaps the following will be more familiar to South Africans.

An end of ground carries 2 seams 7 and 10 in. wide, assaying 45 and 15 dwts. respectively. An additional width of 13 in. of barren stone has to be excavated, making the total width 30 in. What will be the average milling value of the broken stuff?

Answer:—The yield is 6.3 tons per fathom at £3 6s. per ton. (The error is 2½d. per ton.)

I think these examples sufficiently prove the utility of the system both to the miner underground and the millman at surface.

At this time of day it is surely not out of the way to point to the slide rule as an instrument of precision, sufficient to cope with cases such as the above. Prof. Vernon Boys long ago showed that small computing scales can be made with an accuracy of 1 in 500.

The engineer who is in a position to provisionally subdivide his ore ground into some 5 grades, and makes a pro forma forecast to say 2s. in £25, is not likely to trouble about closer readings.

London, Nov. 3, 1898. John C. Little.

PETROLEUM IN THE DUTCH EAST INDIES.

United States Consul S. B. Everett writes from Batavia, Java, that for some time rumors have been afloat that the Sumatra oil companies were not as easy in their minds as they had been, and that the wells were running dry more quickly than new ones could be bored. No one seems to know exactly how much truth there is in all this, and many believe that it is merely a movement of insiders on the Amsterdam Stock Exchange to depress the stocks of these companies, with a view of buying in more and thereby tightening their control. If that be their object, it has certainly succeeded; for, whereas the shares of the Royal Company (Koninklijke Maatschappij) were at one time as high as 1040 per cent. premium, they are now very little over 200 per cent. premium, and there is every prospect of a further decline.

Where there is so much smoke, however, there is bound to be some fire, and there is no doubt that many of the wells are running dry at an alarming rate. This in itself would not be so very important, as there is much new territory, practically half Sumatra, which has not been worked, and which gives every indication of being good oil country; but the trouble is that the Dutch have neither capital nor men enough to go ahead, and they will not permit foreigners to help them out.

American oil experts are not permitted by the Dutch laws to work in the new Tamiang concession, although it is freely admitted that there are not enough Dutch experts competent to do the work. The alleged reason is that Tamiang being a so-called dangerous district, the Dutch are afraid that if any foreigners should get killed by rebels there, their respective governments would make troublesome reclamations. This, however, does not explain the hostility to foreign capital, which is absolutely necessary if they are to do anything with Sumatra, Borneo, and New Guinea.

Last year, on a capital of 8,000,000 guilders ($3,200,000), the directors of the Royal Company paid a dividend of 56 per cent., which was practically all the cash they had in the treasury at the time; and that, too, in spite of the fact that they knew their wells were running dry, and should have kept back every cent they had for the purpose of opening up new wells and more territory. Desperate as the situation will soon become, the Dutch Government will not permit either foreigners or foreign capital to take a hand. The same policy holds good with regard to coal and mining concessions in Borneo and the Celebes.

The situation, therefore, is full of encouragement for the Standard Oil Company. The Russian oil has been nearly driven out of the market, and if the wells now being worked in Sumatra run dry, and Dutch policy does not permit of new ones being opened, American oil will again have a monopoly and raise the price to a paying point. Many shrewd observers here, including even Dutchmen, believe that Americans will get control, in some way, of the better Sumatra oil fields. I hope this may be true, for Sumatra is among the richest countries in the world and has hardly been touched.

MAGNETISM OF IRON ORES.—It is interesting to know that certain specimens of magnetite surpass most kinds of steel in their capacity of retaining magnetism. The London "Electrician" says that A. Abt has tested speciments of magnetite from Moravicza, in Siebenbürgen. They have a greater degree of remnant magnetism than steel manufactured by the puddling, Bessemer, or open-hearth processes. But they are surpassed in this respect by certain crucible steels and by tungsten steel, a Westphalian specimen of the latter showing a remnant magnetic moment of 62 units, as against 37 for "diamond" steel, 34 for Reschicza crucible steel, 29 for open-hearth steel, 15 for puddling steel, and only 3 for Bessemer steel. In 122 days a rod o f magnetite only lost 1.5 per cent. of its remnant magnetism.

THE SUBTERRANEAN QUARRIES NEAR MAASTRICHT.—The labyrinth of the Petersburg, near Maastricht, in Dutch Limburg, is a very interesting curiosity, says "Stone." Geologically the formation belongs to the Senonian chalk and the Maastricht tuff, as it is called, consists of coarse grained, yellow marls, which resemble sandstone in appearance and which are lined with rows of large flints always lying on their flat side. The marl forms a fair building material, which is very easily quarried. The quarries date back to the most remote ages, though it is not certain that what is to-day pointed out as a Roman or a Celtic quarry need deserve such a denomination. Of recent years the use of the marl has declined. Everybody had, in the middle ages, the right to quarry on his ground without having to pay any royalties. That is one of the reasons why the hill is so strangely honeycombed with passages that one may wander for days, it is said, without twice touching the same point. The marl is usually quarried in blocks 21 in. by 21 in. by 32 in. A furrow is made, a wedge inserted, and the rest is done with the help of a steel saw. Houses built of these blocks have a neat appearance. After about 50 years the mauve yellow turns greenish gray; they can then be scraped and look tidy again.

UTILIZING GERMAN PEAT.—For utilizing the extensive peat bogs in North Germany as a source of power, Dr. Frank proposes, in a communication to "Stahl und Eisen," to put up central stations for generating electric current in the peat districts themselves; and he considers that 1 hectare (2½ acres) of peat bog with a mean thickness of 3 meters will yield 2,500 tons of dry peat, equivalent to 1,200 tons of coal. The peat bogs in the Ems Valley, the area of which is 2,600 square kilometers (261 square miles), would, according to this estimate, furnish 650,000,000 tons of peat, equal to 300,000,000 tons of coal, or three times the total annual coal production of Germany. In order to save the cost of carriage, which would otherwise be considerable, 10,000-horse power central stations would be put up, each of which would consume yearly 200,000 tons of peat, or the production of 80 hectares; and the power thus produced might be utilized in various manners, an immediate application being found in connection with the Dortmund & Ems Canal, which will soon be completed. The author considers, however, that the most interesting utilization will consist in the production of acetylene, the raw materials for which may be obtained easily and at a low rate in the neighborhood; and with 10,000 H. P. a quantity of acetylene may be produced daily giving a light equivalent to that of 700,000 liters of petroleum, and a value per annum equivalent to that of the 20,000 tons of petroleum now imported.

A NEW COMPOUND FOR MATCHES.—In response to the reward offered by the French Government for a substitute for yellow phosphorus in making matches, MM. Sevene & Cohen have submitted their matches. These matches contains phosphorus sesqui-sulphide and chlorate of potash. The sesqui-sulphide is a grey-yellowish substance, which is prepared by heating amorphous (non-poisonous) phosphorus and sulphur. The substance is very stable; Lemoine, who studied it in 1864, kept it for 15 years exposed to the air without noticing any change. Its latent heat is low; it ignites at 95° C. (203° Fahr.) and can be, therefore, lighted by rubbing, like ordinary phosphorus. The mixture, with chlorate of potash burns quietly, whilst the mixture of amorphous phosphorus, which takes fire at 200° C. only, and chlorate of potash is really explosive. For this reason inert substances are added to the chlorate in safety matches; but we still occasionally find safety matches which spit unpleasantly. The new matches are not likely to contain other impurities than amorphous phosphorus and water. They have become popular during the few months they have been obtainable, and are known as the S. C. matches, after the initials of their inventors. The public may hardly have noticed the change, for in their appearance, the new matches resemble the old; they may have a faint smell, more a sulphide than a phosphorus smell, however. The sesqui-sulphide, at any rate, has such a faint smell, but the employes in the works are said not to complain about it. The new matches do not phosphoresce even when rubbed energetically, but they are poisonous to a very slight degree. If they can really be manufactured, transported, and stored with safety and be relied upon to strike, the inventors have claims upon our gratitude. No accidents have occurred as yet.

THE USEFUL MINERALS OF TURKEY.

Written for the Engineering and Mining Journal by R. Helmhacker.

The countries included in the present Ottoman Empire are rich in useful minerals, although the production is very small. There are many regions where the ancient Greeks mined extensively in which at the present time no work is being done. Thus in the ancient Thracia there are deposits of iron, copper, silver and antimony ores, and there are numerous ancient mines, which were operated within the historical period and are known to have yielded good results. In the island of Cyprus there were mines and smelting works; silver and copper were obtained. The mining practically ceased after the Turkish conquest, and in later years has been carried on only in a very intermittent and unscientific way. In Asia Minor silver, lead and copper were produced as late as 1840, but at the present time the only mines existing are those of chrome ore and some small bituminous coal mines.

The operations now carried on are all by foreign companies, the capital being supplied from England, France and Germany. Concessions are granted by the government for 99 years, the companies being required to pay 5 per cent. royalty, 1 per cent. export duty, and a yearly tax of from 40 to 50c. per hectare. This is a general rule, although some concessions formerly granted for mining chrome ore and emery were for a period of 60 years and a royalty of 10 per cent. Salt is a Government monopoly. It must be stated that all the figures relating to mining in Turkey are indefinite, as no reliable statistics exist.

Gold.—In remote times gold was worked in Thessaly, in the range now known as the Rhodope or Despeto Mountains. A little alluvial gold is still obtained in the foothills of these mountains, and also in some of the valleys of Macedonia, but it is impossible to determine the exact amount. In Asia Minor the River Pactolus was in ancient times famous for its yield of gold. The gold in this river was probably derived from the mountains anciently named Tmolus, and now known as Boz-Dagh, while the Pactolus is now called Kara-Su, and no gold is there obtained. Gold is also believed to exist in the Dardanelles District in quartz veins, but is not mined.

Silver.—Half a century ago silver mines were in operation in Thracia and Macedonia, and silver-lead was mined and produced to a small extent, but the production is now nearly stopped. Most of the ancient mines are in the valley of the Mesta, near Nevrakop, where many quartz veins have been observed. Some veins carrying lead are also known near Salonica. In Asia Minor there are many old silver mines, but nearly all of them are idle, not because they have been exhausted, but there is no inducement to work them under the present government. Probably the richest of these was the Gumish-Hane, near Trebizonde, which has produced lead and silver since remote times, but is now abandoned. The district of Kara-Hissar is also known to be rich in silver ores, and two foreign companies have acquired rights there since 1880. The Asia Minor Mining Company has a concession covering six square miles where 20 veins have been located and some development done. The veins are chiefly found in andesite and carry argentiferous galena. One of the mines opened has a vein 2 meters thick on which several levels have been run. The best ores carry about 70 per cent. lead, with from 1.5 to 4 kg. silver to the ton. Most of these discoveries have been based on the ancient workings. The workings are not being extended. In the same district in the Derekioi Valley there is also a concession granted for 99 years to an English company. This covers 24 square miles. Exploration has shown several veins existing in andesite and porphyry, carrying lead, silver and sometimes a little gold. At Katirlan three veins have been opened and some development work done. The concession was granted in 1871, and work was carried on to 1883, when it was suspended. It was resumed in 1892, but has lately been again stopped. The same company worked mines at Keshab, but they are now closed. Silver mines have also been worked at Sivas and Avanos.

Near Diarbekir in Kurdistan quartz veins carrying argentiferous galena and some gold are known to exist. Some mining has been carried on by the Government in an intermittent and irregular way, and the production is not known. In several localities near Erzerum old workings exist, and silver-bearing veins are known but are not now worked. There are also several veins in the Taurus Mountains which have been worked at different times. In the Kyzil-Tepe Mountains several fissure veins have been worked, occurring on the contact between andesite and carboniferous limestone. These workings have been carried on by the Laurium Mining Company, the ore being concentrated and shipped from Aktchai to the company's Greek works.

Tin.—The ancient records show that tin ore—cassiterite—was mined in the Paugaeus Mountains in Thracia, and similar workings existed near Adrianople. In Asia Minor tin mines were worked also, near the present town of Sinus, and there were also mines in Syria, near Aleppo. None of them are now worked.

Copper.—There are a number of localities in Turkey where copper ores exist. In Macedonia three licenses to mine have been granted, and veins have been located. In Asia Minor the region bordering on the Black Sea was in remote times famous for its copper mines. The only mines now worked are those of Bakir and Boyabad, but their total output is less than 40 tons a year. Near Trebizonde copper is mined in a very small way, and there are also a number of abandoned mines. At Tokat are the only smelting works in Turkey, but they are not now in operation.

Near Erzerum in Armenia are several copper mines which were operated as late as 1850. Near Diarbekir, in Kurdistan, on the western bank of the Tigris, is an extensive copper deposit, which was at one time largely worked. In 1870 these mines produced 420 tons of copper, but in 1893 the production fell to 100 tons. The ores were carried on camels to the smelting works at Tokat. The Vilayet of Khudiavendighiar is rich in copper deposits which are not worked at present.

In the Sinai peninsula in Northern Arabia there is a remarkable deposit of copper ore forming lenticular beds with iron oxide in red sandstone of the lower cretaceous formation. In some places the deposit is known to be about 65 meters thick, formed of sandstone impregnated with copper silicate, and also of a black earthy copper ore mixed with iron ore, and carrying a good deal of arsenic. The beds are separated by bands of indurated kaolin and gypsum, and the ore carries as high as 18 per cent. copper. Ancient excavations exist and remains of smelting works and slag dumps have been found in the Wadi Nasseb. It is not known where the fuel used was brought from, as the country is barren and has no wood. Besides the slag broken crucibles, tools and small bronze castings have been found. Two mines have been identified, one of which it is believed was worked about the year 7000 to the year 2000 B. C., while another one has been idle about 3,100 years, and was probably abandoned in the year 1200 B. C.

Lead.—Lead ores are quite common in European Turkey. Some occurrences have been already mentioned under the head of silver. Others are in the islands of Imrus and Semidrek. In Armenia lead ores have been found and mined near Van and in several adjoining districts. Near Gulek lead mines were formerly worked and the ores smelted. Here the lead deposits occur in cretaceous limestones, with flint or clay slates passing into mica slates. The ores are found in lenticular deposits of varying sizes. They include galenite, sphalerite and arseno-pyrite.

Antimony Ore.—There are many deposits of antimony sulphate in Asia Minor, but very little definite is known about them. Antimony ores are obtained near Aidin and shipped to Smyrna in bags, being exported chiefly to England. In 1895 the shipments amounted to 1,322 metric tons. Deposits of antimony are also known on the islands of Mitylene and Chios. The ores shipped from those islands are in large part stibnite. Antimony ores have also been found near Adrianople, at Monastyr, in Macedonia, and at several other points in European Turkey. One of the best known places is at Allkhar, near Rozdan. Here there is a wide vein on the contact between gneiss or mica slate and dolomite. The ore is found in pockets in a clay gangue. At the western end these pockets contain very pure antimony ore, but further on the ores are associated with realgar, and still further arsenic ore only is found. These mines were opened about 1880 and well developed with a tunnel or adit about 500 meters in length. The ore was brought out from the tunnel in cars, and was dressed in a plant consisting of rollers and concentrating tables, which had a capacity of 2,500 tons yearly, the ore being concentrated to about 55 per cent. antimony. At this mine Bulgarians, who are the best miners in Turkey, were employed, while in the dressing plant nearly all the work was done by women, who grow very expert in sorting the ore. The highest production reached was in 1892, when 1,200 tons of antimony ore, concentrated to about 55 per cent. Sb., was shipped to England. The later fall in the price of antimony discouraged the shipments, and the mines are worked now chiefly for the arsenic ores. About 500 tons, chiefly orpiment, are shipped yearly. These mines are worked under a concession paying a royalty of 5 per cent., export duty of 1 per cent., and a land tax of 40c. per hectare.

Arsenic.—Besides the deposit of arsenic ore just described orpiment and realgar are mined in Macedonia to a small extent.

Sulphur.—Brimstone deposits exist in Albania ,on the Dardanelles peninsula, where it is found in beds in the clay and is mixed with bitumen. In the volcanic islands sulphur is found in several places. In the Armenian mountains beds of sulphur also exist, and it has been found in several places near the Dead Sea. In the volcanic region of Arabia valuable sulphur deposits also occur in several places. None of these deposits are now worked, and the brimstone which is used in Turkey is imported from Italy.

Chrome Ore.—This is at present the most important mineral production of Turkey. In European Turkey chrome ore is found in several localities. As in other countries, the chromite is generally found in irregular bunches in serpentine. In most places it is mined by open cuts or shallow pits. Most of it is mined under temporary grants, a royalty of $40 being paid yearly for the grant, with an export duty amounting to about 24c. a ton. The production is now about 3,000 tons yearly, going principally to Germany and Austria.

Asia Minor is a large producer of chrome ore, and at least 120 places have been named where it occurs. The most important mines are in the neighborhood of Aleppo and Iskanderum. Here chrome ore is found carrying as high as 60 per cent. Cr_2O_3. As elsewhere, it is found in pockets in serpentine. Exact statistics cannot be obtained, but the shipments are known to be considerable, going largely to England, while some is sent also to the United States. Important mines also exist in Dagh-Ardi, which have for a number of years shipped chrome ore by way of the port of Gemlik. This ore is less rich, carrying about 50 per cent. Cr_2O_3. Here again no exact statistics can be given, but the ores are sent chiefly to England. The ores can be mined cheaply, as they are taken from open cuts, and the wages of the laborers are very low, running from 16 to 20c. a day, the day being from sunrise to sunset. The most expensive part is the transportation on camel back. Chrome ores are also mined near Smyrna and shipped from that port.

Manganese Ore.—The Kasandra Mining Company has a concession for mining in Macedonia, and has shipped a small quantity, chiefly pyrolusite. In Asia Minor manganese ores have been mined, and are shipped from Smyrna, but very little is known about the mines; the ore is supposed to be taken from small pockets. Near Trebizonde there are manganese mines, but the output has never exceeded 1,000 tons a year, shipped to France. At Ordu, on the Black Sea, there are small mines which are not now worked.

Iron Ores.—There are extensive deposits of iron ores in Turkey, but the old iron industry is entirely dead, and European companies will not invest the capital necessary to build blast furnaces. There were formerly furnaces in the Taurus Mountains, which used the rich iron ore found on the slopes of the Bulgar-Dagh. Here veins of limonite occur in limestone, and at other points in the same range there are extensive beds of limonite and hematite. Some of these have been mined at different times.

In Syria, in the Lebanon Range, there are large iron ore deposits, generally in lenticular masses in an argillaceous limestone. Other ores are also found which in former times were smelted in small furnaces, and from these ores the famous Damascus steel was made. Iron ores are found near Aidin, and near Trebizonde. They are also found

in the Sinai peninsula. In Armenia iron ores abound in many places, and there were forges and furnaces of a primitive kind, which have disappeared under Turkish rule.

Emery.—This mineral, which was first obtained from the Grecian Archipelago, was discovered in Asia Minor by L. Smith in his explorations, which lasted from 1844 to 1847. At first the emery was found in scattered masses on ridges formed mainly from a bluish limestone. These were the last remains of the stone in which the mineral was originally imbedded. The emery is found in a district extending from the Gumugh-Dagh, near Lokia, to Kutaya; also west of Koola and north of Smyrna, in fact, on nearly all the ridges separating the river valleys in this region. Further to the south along the small rivers running from the mountain range boulders of emery are found mixed with gravel, which have probably been carried down from the mountains. The region is composed of talcose and chloritic slates passing into mica slates, with large beds of limestone. The richest and best situated deposits of emery are in the Gumugh-Dagh, and along the railroad which has been built from Smyrna to Aidin. Here the emery is found in pockets, some of which are several meters across, imbedded in limestone. The rock is very hard and tenacious, and is difficult to break. As mined the emery is a mixture of corundum with magnetite and hematite. Occasionally it is accompanied with chlorite with inclosed octahedral crystals of magnetite. Its specific gravity varies from 3.75 to 4.30, the principal constituents being Al_2O_3, 78 to 60 per cent.; Fe_2O_3 9 to 33 per cent. The remaining constituents are CaO, SiO_2, CO_2 and water.

The deposits on the Turkish islands in the Aegean Sea, including those of Naxos, are well known.

The original grant for working emery mines was purchased by Mr. Abbot for an annual payment of $55,000. He already held a contract for mining emery from the Greek Government, and later entered into a partnership with the English firm of John Taylor & Son. The latest statistics available are for 1895, when 8,400 tons were exported from Smyrna. All the emery mined is shipped from Smyrna, the United States taking about 33 per cent. of the total, and Great Britain about 40 per cent.

Minor Minerals.—Talc is known in many places in Turkey, but is not an article of commerce of any importance.

Many fine varieties of marble and limestone exist and are used to some extent locally in building.

Magnesite is known in several places, but is not exported. Gypsum is also common, being found in large beds in several places.

Several kinds of mineral paint are known. Turkish umber is of fine quality, and was probably used very extensively by the Egyptians, and later by the Romans. The same may be said of the ochers, which are found in many places.

Sepiolite is also found, the most important fields in the world of this mineral—better known as meerschaum—being found in Asia Minor, near Broussa. It is found in alluvial earth formed chiefly of decomposed serpentine. The mineral is mined in open pits, being found in small lumps or masses of varying size. In the principal fields nearly 4,000 of these pits have been opened, many of them being still worked. Most of the work is done by criminals and vagrants, who are hired from the Government by the owners of the concession, and at times as high as 1,000 men are employed. The meerschaum is dried and cleaned to free it from clay, and packed in bags and shipped. The price varies, increasing rapidly with the size of the lumps. The concession is heavily taxed, the miners being required to pay a royalty of 12½ per cent. and an export duty of 12½ per cent. additional. No exact statistics can be obtained of the quantity shipped, but it is believed to be very considerable.

Other products known to be mined are grindstones, millstones, flint, kaolin and soapstone.

Salt occurs abundantly, both as rock salt and in brine or salt springs. The salt manufacture is closely controlled by the State, being a monopoly of the Government. It is manufactured in three ways, by evaporating sea water, by evaporating the brine from salt springs or lakes and by mining rock salt. All of these are under charge of officers appointed by the State, and exact statistics of production are not obtainable. The salt springs and wells are most common in Asia Minor, though in Syria many exist, especially in Palestine in the vicinity of the Dead Sea. In the central plain of Asia Minor there is a great salt plain or desert, covered in large part with white efflorescence of salt, probably the remains of an ancient lake. In the surrounding region there are many salt lakes of different sizes. From these the salt is collected in different places and a considerable supply is procured. Rock salt is found and worked near Van in Armenia, and at several other points in the Eastern mountains. Very little is known about these workings.

Soda deposits are found in several places in Thracia, in Armenia and in Asia Minor. Saltpeter is also found. Alum earth exists in a number of places, and a little alum is manufactured, though no statistics are available.

Coal.—Bituminous and lignite deposits are known in many parts of Turkey, but very few are worked. In Macedonia a few beds of lignite are worked for local use, and the same is the case in Thracia. In Asia Minor lignite is mined in several places. The only coal mines of any importance opened are near Eregli—the ancient Heraclea—where a French company has a concession. These mines were described in the "Engineering and Mining Journal" for August 20th, 1898. There is little doubt that should Turkey enter upon a period of industrial development sufficient supplies of mineral fuel will be available.

Asphalt and bitumen of different kinds are found in a number of places. The best known deposits of bitumen are those in the neighborhood of the Dead Sea, which have often been described by travelers. The only deposit worked is near Salonica, in European Turkey, where asphalt is taken out by a French company. Small quantities are mined in other places, but there is no other production of commercial importance. A large bitumen deposit exists in Kurdistan, but very little is known about it, and it has not been explored.

Petroleum is believed to exist and oil springs are known in old Servia, near Broussa, and in Armenia, but no attempt has been made to sink wells or develop these deposits.

ELECTRIC MOTORS IN SHOP AND MINE.

By Clarence M. Barber.

In this paper, read before the Civil Engineers' Club of Cleveland, at the October meeting, the author said that the claims made for the electric motor as a desirable power in shop and mine are based on the ease with which it can be applied to almost all purposes for which power is required; economy of installation, the saving of power, and other incidental advantages. The absence of overhead shafting and belting is a great consideration, as these greatly interfere with the use of overhead cranes, which latter have come to be indispensable where heavy work is to be handled. Belts and shafting, indeed, preclude even the use of jib cranes. It is a valuable consideration, in connection with the use of the motor, to be able to place machinery at any angle with the meridian and at any distance from the source of power. He referred to the fact that large punches and shears are sometimes built, with motors attached, so arranged that the whole may be turned on ball bearings about a vertical axis, thus accommodating the machine to any position of the work.

The first cost of electrical installation is greater than that of belt and shafting transmission, but the cost of maintenance is less. The discussion of the relative loss of power in the two forms of transmission showed widely differing data. Theoretically the loss of power in transmission by shafting is small, probably below 10 per cent. Prof. Flather's investigaton showed the loss to average 40 per cent. in the installations from which his figures were taken. The loss of 80 per cent., which is given for the Baldwin Locomotive Works under the old method which preceded motors, is exceedingly high. Henthorn gives the results of 55 tests in New England shops, with an average loss of 26 per cent. Prof. Fessenden reports 108 cases and arrives at 69 per cent. as the average loss. The great variations noted are due to the varying extent of the area over which power is transmitted, to the character of the machinery, alignment of shafting and the amount of lubrication, and to the personal equation of investigators. A fair average, perhaps, is 30 per cent. In the use of electricity there is a loss in the generator, in transmission and in the motor, the total averaging about 23 per cent. Some electrical concerns guarantee that the average plant losses shall not exceed 15 per cent. There are always machines out of use in various parts of a plant, and this fact greatly reduces the capacity of the electrical equipment required to drive them. The time they are idle is a credit to the power plant. The actual quantity of power required is constant, however, within certain limits, and the theoretical requirements in engines and dynamos may be reduced. The plant of the American Lithographing Company, of New York, was cited as an illustration. The total capacity of the engines is 660 H. P.; the generator is 590 electrical H. P., the rated capacity of the motors is 847 H. P., and there are besides 3,000 incandescent lamps and 140 arc lamps. The total generating capacity is only 50 per cent. of what it would be if all the machinery was on at once. The average load is really only 17.6 per cent. of the rated capacity of all the arc and incandescent lamps and motors, and the maximum only 32 per cent.

The further point was made that electrical transmission is very flexible. Motors with shunt wound fields permit of considerable variation by the rheostat. Once it was difficult to get slow speed motors, but the want is now supplied, and now 150 or even 100-revolution motors can be secured in quite small sizes. Recently a great deal has been accomplished in the development of the multi-phase current motor and little remains to make it a competitor of the continuous current machine.

Concerning the use of electricity in mining, it was stated that the electric motor early found its way into coal mining and is now used to haul coal to the tipple, and in hoisting and pumping, drilling and under-cutting. The opinion was expressed that an electric percussion drill could be made, but none has yet been produced that fulfills the requirements. The pneumatic percussion drill is at a high degree of perfection and exhaust air from the pneumatic drill is an advantage. But even in this field electricity has its use, and where long-distance transmission is included in the problem, is invited to stand behind the pneumatic drill and drive the air compressor.

In the discussion which followed the reading of the paper Prof. C. H. Benjamin spoke on the question of economy in the use of the electric motor. He referred to the fact that in nearly every establishment the expense of power is comparatively small, and even a saving of 50 per cent. in coal is not a great item. The principal reason for using electricity is that it will increase the output per man per machine. Flexibility is a great advantage—the ability to extend the plant at any time, move any machine at any time, and secure entire freedom from the necessity of alignment. In one establishment to which Prof. Benjamin referred, the principal reason for introducing electricity was that cranes might be used.

Mr. John McGeorge, referring to the respective statements of losses by the two forms of power, took issue with the view that the difference between the 80 per cent. loss attributed to one system of belting and shafting and 15 per cent. loss attributed to certain electrical installation, should be credited to the motor. An engineer would never dream of putting in such plants as those represented in this statement. The shop problem was one that presented wide fluctuations. The machinery in use at one time made a very heavy call upon the electrical installation at one time; again it was very light. He cited a Carnegie plant as a striking example of the advantage of electricity. While there was a total of 4,500 H. P. in motors, they were driven by a generator of 750 H. P. Had steam engines been employed furnishing power direct or through belting and shafting, 4,500 H. P. would have been required. The explanation of the wide difference between generator and motor capacities was that the motors were widely scattered and only a portion brought into service at once.

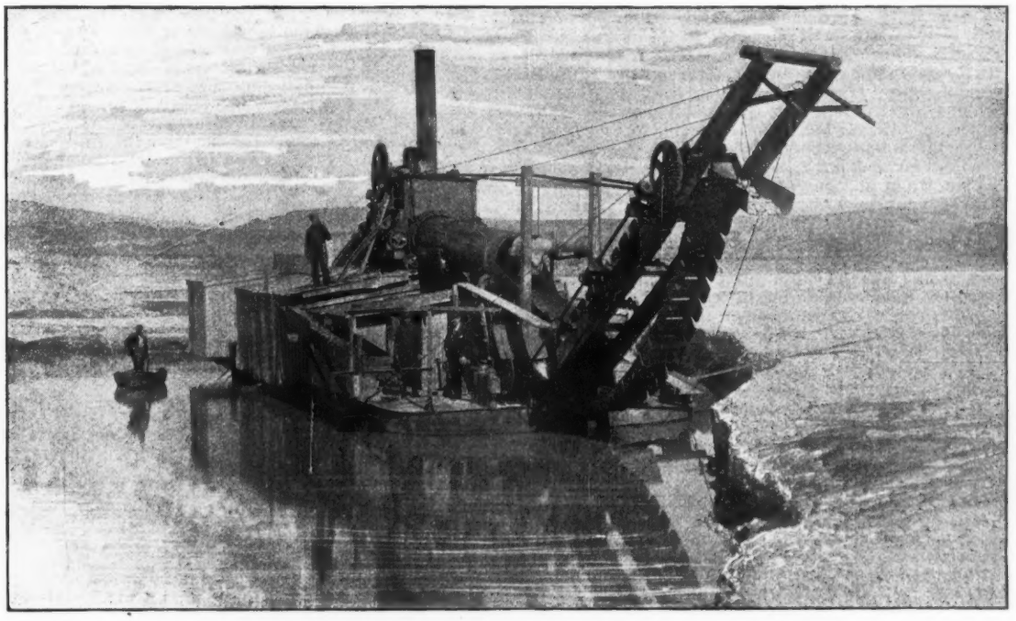
GOLD DREDGING IN NEW ZEALAND.

New Zealand has been in a special degree the gold producing country where the working of river beds by dredging has been practised. The system has there been used on all scales, from the small dredge employing only a few men up to those of the largest kind, fitted up with the latest and most approved machinery. In view of a proposed introduction of dredging upon some of the rivers in New South Wales the Mine Department of that colony has recently issued a monograph which gives some interesting details of the work done in New Zealand.

The dredge system of recovering gold has been in use in New Zealand for 34 years, the first work of this kind having been done on the Clutha—also called the Molyneux—River in 1864. The first dredges were of the old spoon pattern, worked by hand windlasses, and of course produced only small returns. In the early days, however, when the richer bars on the river had not been touched, they produced very good profits.

The next dredges used lifted the gravel by a chain of buckets, the motive power being a water-wheel moved by the current of the river itself. These could be used only on a stream having a considerable current, but they were cheaply operated and many of them were very successful. They were, however, limited to the deeper portion or center of the stream, being usually unable to work close up to the banks. In spite of these disadvantages current wheel dredges are still in use.

Steam dredges were first introduced on the Clutha in 1881. They differed from the machines previously in use only in being supplied with engines and boilers. They soon met with general favor, as they were able to keep at work in all stages of water, to work under banks and in coves where there was little or no current, and to cut channels for themselves into flats adjoining the rivers.



DREDGE "ENTERPRISE," NEW ZEALAND.

The most important improvement made later was the introduction of the tailings elevator. The first of these was built by Cutten Brothers of Dunedin, in the dredge "Enterprise," which was employed in working on the Clutha River. This enables the dredge to dispose of the tailings from the sluices or washers by stacking or depositing them out of the way, and thus preventing them from choking up the river channel or finding their way back into the excavation made by the dredge,

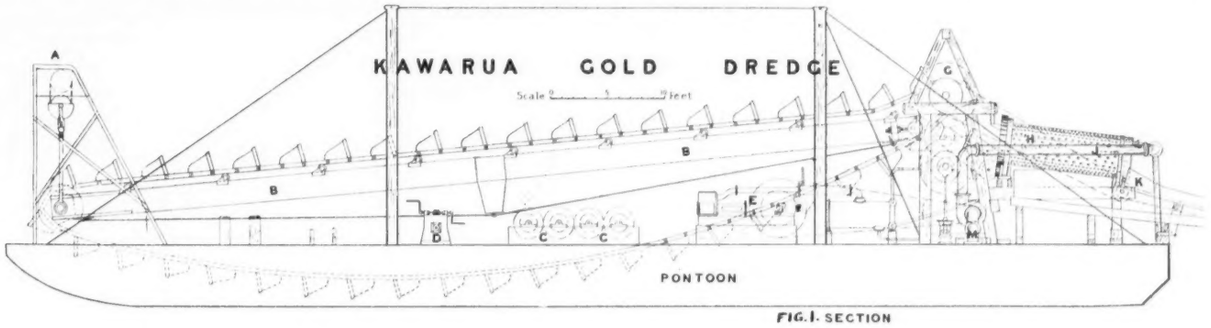
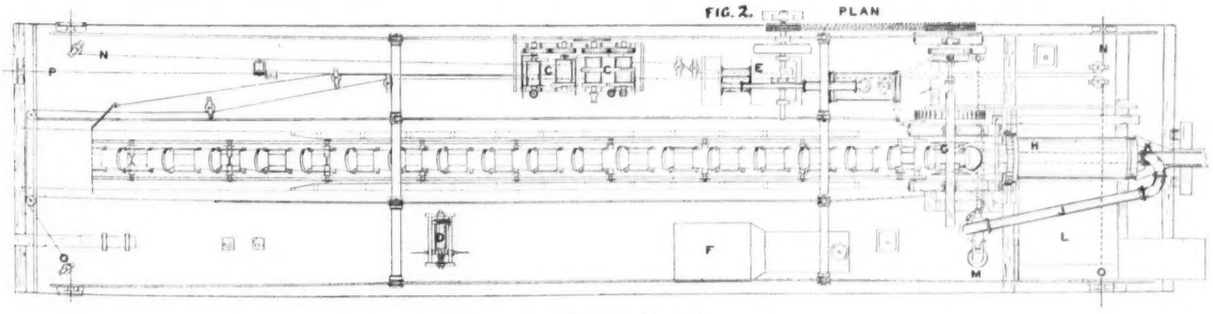


FIG. 1. SECTION

FIG. 2. PLAN



KAWARUA DREDGE, NEW ZEALAND.

as they have a tendency to do when discharged directly from the boat.

Suction dredges and pumps have been tried in New Zealand for handling river-bed gravels, but generally with very little success. They have been entirely abandoned.

For saving the gold the ordinary sluice-box is still used to some extent, but the revolving screen is now most in favor. In this method the dredge buckets discharge their contents into a chute which leads

into the upper end of the screen. The screen is circular, is inclined at a moderate angle and revolves slowly, usually from 8 to 10 revolutions a minute. A spray of water washes the fine material and gold through the perforations upon tables arranged below, the refuse being delivered from the lower end of the screen into the buckets of the tailings elevator. The screens generally used vary from 3 ft. to 4 ft. 6 in. in diameter, and from 10 ft. to 22 ft. in length. Most of them are provided with worms or screws to secure the distribution of the gravel.

In the latest dredges the tables for catching the gold are arranged in three shelves, so that the center of each table is equidistant below the screen. They have in the aggregate a width equal to the length of the screen, a length of 10 to 14 ft., and fall of 1½ to 1¾ in. to 1 ft. They are covered with either plush or cocoanut matting and over this is wire netting with ¼-in. rectangular mesh. This netting is found to answer the purpose of riffles very well.

In the accompanying illustrations, Figs. 1, 2 and 3 show the Kawarua gold dredge designed by J. C. McGeorge, of Dunedin, for working very deep ground. It has the longest ladder of any dredge in New Zealand. Fig. 1 is a longitudinal section, with the ladder raised for transportation. Fig. 2 is a plan, while in Fig. 3 the elevator is shown separately. In these drawings A is the crane with gear pulleys for raising and lowering the ladder. B is the ladder; C the winches, D the anchor winch, E the engine; F the boiler; G the tumbler driving the bucket belt. The revolving screen is shown at H, and J is the pipe through which water is supplied to the screen. K is the chute through which the waste from the screen is carried off. The gold saving tables are shown at L, while M is the pump. While at work three mooring lines are generally used to hold the dredge, the starboard line N, the port line O and the head line P.

In Fig. 4 is found a view from a photograph of the dredge "Enterprise" on the Clutha River. This dredge was built by Cutten Brothers, of Dunedin, and was the first one supplied with a tailings elevator. Fig. 5 shows the dredge "Perseverance" on the Clutha River, and is of interest as showing one of the current wheel dredges still at work.

The cost of running a large dredge capable of elevating and washing 90 cu. yd. of gravel an hour, is given as follows per week: Fuel, 16 tons of coal, $46; labor, 1 man at $24 and 5 men at $14.40 each, $96; repairs, general expenses, etc., $96; total, $238 per week. It is claimed that a profit can be made where the gravel contains 1 grain of gold to the cubic yard. As an example the following return of the Jutland Flat Gold Mining Company, operating a dredge at Waipori, is given for two years:

	1896.	1897.
Total working time, hours	6,171	5,846
Actual dredging time, hours	5,678	5,514
Quantity lifted, cu. ft.	402,919	398,608
Gold obtained, ounces	1,135	1,177
Average yield per cu. yd., grains	1.35	1.41
Amount paid in dividends	$5,400	$9,000

During 1896 the sum of $3,394 was spent in litigation. If this amount is added to the dividends paid it would make the profits $8,794 for the year.

BRITISH COLUMBIA. XV.

THE MINERAL RESOURCES OF VANCOUVER ISLAND.

Special Report of W. M. Brewer, Traveling Correspondent.

Until within the last few years practically nothing has been known of the occurrence of minerals on Vancouver Island other than the coalfields along the eastern coast. Although placer gold was mined on Leach River, about 25 miles from Victoria, during the Fraser River and Cariboo excitements, no effort until quite recently appears to have been made to locate quartz leads or other ore bodies. Coal mining around Nanaimo and Comox has been an important industry since the early fifties. Quarrying limestone in the vicinity of Victoria for quicklime, as well as hydraulic limestone for cement, has been carried on for years past.

The discovery of free milling gold bearing quartz along the shores of Alberni Canal and float, heavily mineralized with iron and copper pyrites, on the west coast of the island on Quatsino, Clayquot and other sounds proved an incentive to prospectors to attempt a thorough exploitation of the west coast and interior of the island during the past two seasons.

In 1897 the discovery of the Phair or Skirt Mountain group, and the Mount Sicker mines carrying good values in copper, was followed by a stampede into those districts, the former located near Goldstream, about 10 miles from Victoria, and the latter near Duman's Station, on the Esquimault & Nanaimo Railroad.

During the present season all of these localities, and especially the west coast, have been the scenes of considerable prospecting. But still the interior of the island remains comparatively unexplored. The reason for this is chiefly the lack of roads and trails. The mountains are not of great altitude, but the underbrush and dense forests render exploration most difficult. So far as I can learn, the work conducted on the west coast has been quite superficial, but many samples of high grade copper ores have been brought from shallow workings. Most of these samples are solid iron and copper pyrites, closely associated, though some are pyrrhotite carrying good gold values as well as copper.

At Alberni several thousand dollars have been expended in building wagon roads and trails, as well as opening the prospects. The Alberni Consolidated group has attracted the most attention because of the high values returned from a shipment of ore to the smelter, and from another to a stamp mill, the returns from the former being $40 per ton and the latter $18 per ton in gold. Early in the spring of 1898 the property was bonded to an English syndicate, a four-stamp milling plant, with concentrator, was erected at the mine to make a thorough milling test, and a few hundred tons of the ore were treated by amalgamation. I am reliably informed this resulted in a saving of $7 per ton, and it was currently reported that the sale was negotiated, but at the last minute the deal fell through and all work has been suspended. The future policy of the company has not been made public.

Near Goldstream, about 10 miles from Victoria, is located the Phair or Mt. Skirt group of copper prospects. During a recent visit I examined the workings and dumps. About 600 ft. of tunnels, shafts and drifts comprise the former, and about 100 tons of sulphide ore, taken from drifts, the latter. There are three distinct leads of ore, in a formation very similar to that at Rossland. The fissures appear to be quite persistent, but each ore body has apparently only one wall. There is sufficient silica in the matrix for fluxing, although a great deal of the ore is solid pyrites. While the two leads on which most of the work has been performed vary in thickness from a few inches to 4 ft. of solid ore, yet on the hanging wall side the country rock is mineralized sufficiently to be treated as low grade ore, for an undetermined thickness. The third lead, which has only been prospected on the surface, is apparently 60 or 70 ft. in thickness.

The owners are steadily prosecuting the work of development, and propose erecting a matting plant in the future, providing deeper work shows ore in sight to warrant the investment. The assay values vary from 25 per cent. down to 7 per cent. in copper, and 2½ to 4 dwts. in gold. The ore lies in shoots, but the fissure, so far as determined in the drifts, is quite persistent. As well as I could judge from a casual examination, there is ample ore in sight to more than pay for the development work.

In the neighborhood of these prospects, but distant a few miles, prospecting work is being carried on by several local syndicates, where the outcroppings of gossan indicate the occurrence of bodies of sulphide ore.

Almost paralleling this belt of igneous rocks occurs a wide belt of slates, with lenses of quartz interlaminated. These slates have a strike about N. 60° W., and can be traced for several miles in that direction. Gold values have been obtained from the quartz outcrops, and a number of mineral claims have been located. Some of these have been prospected by crosscut tunnels and fair values obtained by assay, though no mill tests have been made. The ore is apparently free milling near the surface, at any rate. Should further development determine the permanency of the bodies, and that the grade of the ore is sufficient to warrant the erection of milling plants, Victoria will become a mining center.

Mining is yet in its infancy on Vancouver Island, but the prospects are quite promising, while the close proximity of coking coal and limestone to the sulphide ore bodies offer superior inducements, for the erection of smelters for matting at least, on the island. The shipment of ore from the west coast mines by steamer can be done at a very low cost, even to Swansea smelters, if the average grade will warrant.

BENTONITE.—In the "Engineering and Mining Journal" for October 22d, there appeared an article on the Wyoming clay known under this name, and it was there stated that the use made of the shipments of this clay was not known. We are now informed that some of this clay is used in making toilet soap, the clay giving to the soap a certain weight and body which is considered desirable. A small quantity also, after the alkali mixed with it has been dissolved out, is used in adulterating candy, as it then closely resembles terra alba, which is used for the same purpose. The quantity used is not very large.

SAULT STE. MARIE CANAL TRAFFIC.—The official report shows that from the opening of navigation up to October 31st a total of 15,775 vessels passed through the Sault Ste. Marie canals, against 15,355 in 1897 and 17,053 in 1896. The average size of the vessels was greater than in previous years, the average cargo having been 1,173 net tons this y ear, 1,018 tons in 1897 and 853 tons in 1896. The total freight this year was 18,509,048 net tons, which compares with 15,629,382 tons last year and 14,539,968 tons in 1896. The principal mineral freights included in these totals have been, in net tons:

	1896.	1897.	1898.
Iron ore	7,459,264	9,879,341	10,824,454
Anthracite coal	349,929	444,258	438,083
Bituminous coal	2,315,437	1,752,283	2,850,376
Copper	106,038	107,612	105,180

Of the total freight moved this year, west-bound was 3,848,122 tons, or 20.8 per cent.; east-bound, 14,660,926 tons, or 79.2 per cent.

ORE SEPARATION AT GRANGESBERG, SWEDEN.—In describing the mechanical system at the Grangesberg iron mines, Mr. F. S. Warburg states that formerly all pieces of ore which were too small to admit of their being included in the regular material sent out, all the powdered ore or dust mixed with the same, and all the pieces of mixed ore and "Graberg" where the minerals were too intimately associated to warrant their being specially separated, were put aside in the mines, raised separately to the surface and thrown away. Now they are loaded into a special wagon, which conveys them to the separating mill, where they are emptied into a large wooden trough, the bottom of which is formed of a stout grating. Four men, two of whom stand on either side of the trough, remove all the large pieces of useless mineral which cannot pass the grating, while they drop the bits of pure ore down a partition at the ride, which carries them direct to the railway trucks. The smaller pieces fall into a revolving conical drum, pierced with holes and adjusted on a slant, over which a stream of water is kept running. Here those bits which pass the holes become sorted from the larger ones and fall into two different revolving magnetic separators, which attract the magnetic ore, whence they are carried out to a small rope railway, and are hauled up and finally emptied into the railway trucks. The waste material drops into a slanting chute, where it is subjected to yet further examination, and, after the non-magnetic ore or Swedish hematite has been removed by hand, the rest is discarded. The iron-ore dust is carried outside by the stream of water, and deposits itself on the ground in a thick layer, where it gradually dries in the air. This mill was built originally for 50 tons daly, but now sorts and mills 180 tons per day.

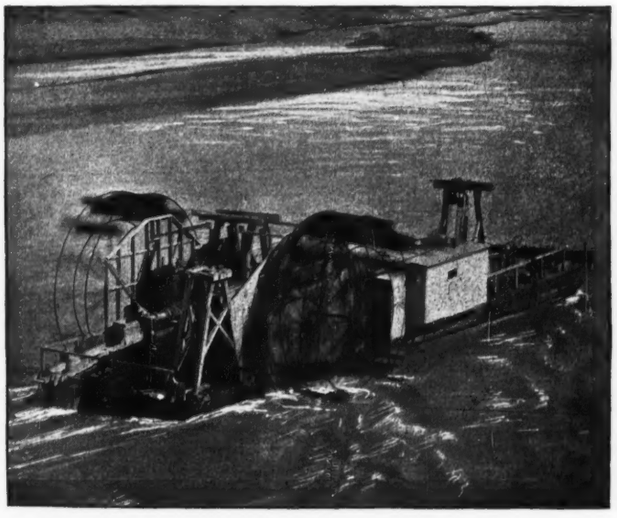
ELECTRIC MINE SIGNALS.*

This paper draws attention to the various systems of transmitting signals in mines. The old fashioned method—still much used in English coal mines—is the hand-pulled rope and bell, or flapper, the difficulty of which is that in deep mines there is apt to be an uncertainty in its indications, and the engine-man cannot always tell if each pull of the rope has produced a sound. In America a pneumatic system is used, consisting of a line of pipe and an air cylinder about 6 in. in diameter by 9 in. long, with a piston movable by a lever, which is employed to give a sudden push of air down the pipe line to blow a whistle all over the system. The pipe used is recommended to be at least 2½ in., and even more for long distances. The pipe should be smooth inside, as it can then be talked through, which is not possible with rough pipe, although signaling can be effected through rough pipe.

Though by no means perfect, electrical signaling seems to be, on the whole, the best. If there are balanced skips for which to arrange signals, there are three wires run down the shaft, two being connected to the poles of a battery, and the third, or middle wire, being used to connect all bells in series and ring them simultaneously when a circuit is made through any push on the system. All bells are, of course, to be placed between the middle wire and the same pole wire, and the pushes between the middle and other pole wire. A separate signal should be arranged from the pit mouth to the engine room and vice versa, for the driver could not otherwise tell whence the signal comes, whether from the top or the lower set of skips.

A bell at the mouth keeps the banksman informed as to what the skips are doing. Communication with the signals below must only be possible by the engine driver's apparatus. The chief disadvantage of the system is that the driver has no means of knowing the places of the skips except by the correctness of the signal given, but the author has never known of an accident, as the bells ring simultaneously through the mine when rung from any one place, and those at any level know where the skip is and what it is doing.

In a second system a separate wire is run to each level, the two battery wires being run to each level also, and when a signal is sounded it rings only the bell at the one place and a bell or indicator at the mouth and in the engine room. This system simplifies the code of signals; the driver knows what he is doing, but the cost and complexity is increased. The first system is that which the author advises. The wires may be run in either iron pipes or wooden conduits run along the roof timbers in an incline, and coated in and out with coal tar, the wires, No. 18 S.W.G., and lead covered, being held in position by wooden cleats, and all bells and pushes being placed in wooden boxes. This system worked well for eight months, after which the settling of the shaft so stretched the wires that they broke, though no further trouble has since arisen. Though exposed to much acid water, the lead-covered wires had not been affected. When conveyed in iron pipes trouble has been found from internally condensed moisture, and from grounding of the wires in the pipes.



CURRENT-WHEEL DREDGE, CLUTHA RIVER, NEW ZEALAND.

The Robinson Deep and the Simmer & Jack mines in the Transvaal discarded a pipe system, and installed a bare copper wire system on double petticoat insulators of porcelain. But little trouble has been experienced. The wires should be at least 7/18 S.W.G., and they should be shackled off at distances of each 100 ft., and a bight made in the wire to run off moisture. Below a bight in a shaft the wire continues not directly underneath the length above, but to one side. Armored cables should be pure rubber, insulated with a lead covering to the conductor and a steel wire sheathing. Such a cable can be bent round corners without injury to any part. In vertical shafts it may be hung well up in a corner of the ladderway, and in inclines in an upper corner of the skipway. The author considers that armored cable is the best for signaling purposes. He considers that one quadruplex cable is fully as good as a pair of duplex cables, one for the pole wires and one for the two middle wires. Steel-sheathed cable may carry its own weight in vertical lengths of 300 to 400 ft., the connections between the lengths being in watertight boxes.

At pump stations or landing stages, cable should be boxed in for 10 or 12 ft. above landings, and on inclines cable ought to be removed from the risk of having hung on it lamps, tools, etc., and generally precautions taken against injury.

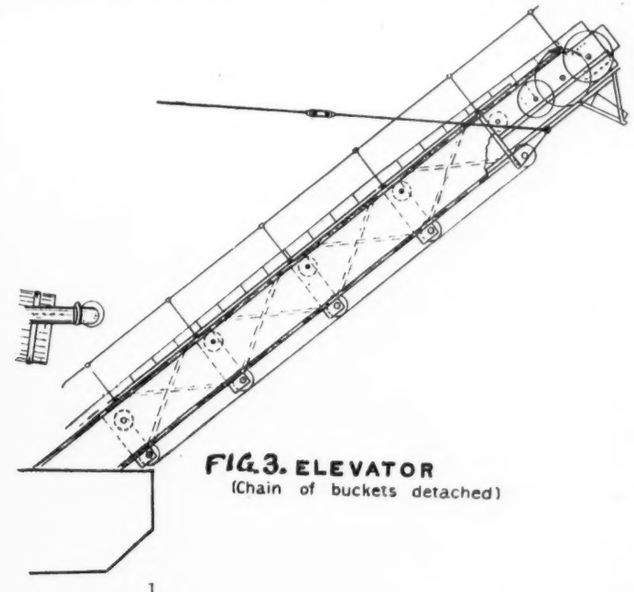
There is no satisfactory signal bell. Pushers, in general, do not give satisfaction. The galvanometer key is better. Pulls, likewise, are apt to be unsatisfactory, as they depend on springs, which are apt to fail by rust. For batteries, the secondary cell is preferable for cleanliness and compactness. The Leclanché primary is satisfactory is properly attended. Whatever form be employed, there should always be an auxiliary. The E. M. F. should range from 6 to 16 volts, averaging about 10 volts.

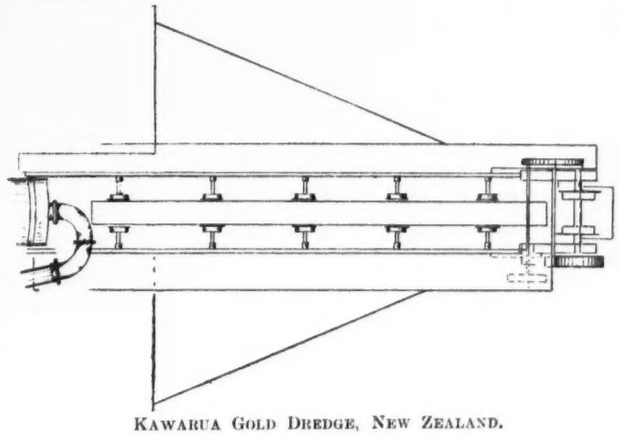
Bells and pulls must be inspected weekly at least, and all contacts kept bright.

*Abstract of paper read by Mr. Clements before the South African Society of Electrical Engineers.

MINING MACHINERY IN RUSSIA.

According to an official report forwarded by the British Ambassador at St. Petersburg, a decree has been issued ordering the admission into Russia free of duty certain machinery intended for working gold mines in Siberia and the Ourals. The exemption is granted for 10 years, from January 1st, 1899, to January 1st, 1909. The machinery covered by the decree includes machines required exclusively for gold mining or working gold ore, as follows:





KAWARUA GOLD DREDGE, NEW ZEALAND.

1. Concentration of all systems for working gold-bearing sands.
2. Concentrating appliances for the reduction of slimes and the extraction therefrom of pyrites.
3. Centrifugal concentrators for the dry process of concentration of gold-bearing gravel.
4. Apparatus for amalgamating gold-bearing ores, including amalgamators of every description, mills, pans, metallic sheets and other apparatus destined for the extraction of gold by means of amalgamation.
5. Apparatus for the extraction of gold by wet processes, roasting ore furnaces of every kind and other apparatus for chlorination, as generators for obtaining chlorine, cylindrical pans of boiler and half-boiler iron, and all appurtenances belonging to them (bolts, distributors, siphons, etc.); apparatus serving for the extraction of gold by means of cyanide of potassium and other chemical reagents, as also dynamo machines for electrical deposit of gold from cyanide solutions.

The decree requires certain conditions to be observed. For the free importation of the machines specified a certificate of the district mining engineer of the Crown must be presented to the custom house at which

the goods are clearable to the effect that the machines and their accompanying parts which have arrived at the custom house are in conformity with the specifications and drawings furnished to him, the engineer, and that they are really required for the working of gold and are imported by a certain person or company to be named.

In case of the establishment of depôts of gold mining machines in the provinces of Yenissei, Irkutsk, Yakutsk, and the Trans-Baikal, Amour and the Maritime Provinces in Siberia, the owners of these depôts, in order to obtain permission for receiving foreign machines duty free, must present certificates from the district mining engineer of the Crown to the effect that the machines and their parts imported are applicable to gold mining, and come under the class of those enumerated in the published list, and that their owners really possess depôts of gold-mining machines.

SPECIFICATIONS ON STRUCTURAL STEEL AND RAILS.*

By William R. Webster.

The specifications for American structural steel and rails are, on the whole, very satisfactory. Some, of course, are behind the times, but common practice of to-day gives a much better material than they call for. On the other hand, there are specifications in which the physical and chemical requirements do not agree, or that call for an extremely high elastic limit or other results, which cannot be obtained by the ordinary methods of manufacture and testing. Specifications of this kind cause the manufacturers temporary trouble, but soon adjust themselves, either by the engineer coming out frankly and modifying them or giving instructions modifying the point at issue, though still adhering to his printed specification. The latter method is much to be regretted, as the specifications are very misleading, and the steel accepted under these modifications never has and never will meet the original requirements.

The quality of steel depends, (1) on its chemical composition; (2) on the treatment it receives in the course of manufacture; and we are learning year by year better to distinguish the results due to each. To-day, at some of the mills, they are getting results that were formerly considered impossible. I refer to rolling the steel into finished product, which meets all the requirements of the most rigid specifications, without stopping to make any preliminary tension test whatever. The steel is not allowed to cool from the original casting temperature until it is rolled into the finished product. This, of course, is a great saving of fuel, and increases the output. This great advance has been brought about by close observation of the methods of manufacture and the establishment of the relation between the chemical composition and the physical properties. The analysis of each heat is made while the ingots are still in the soaking pit. The ultimate strength is estimated from its chemical composition; then the heat of steel is rolled on orders where it will apply, due allowance, of course, being made for the thickness of the finished product.

I have made a special point of the heat treatment of steel in connection with work, as the quality of the finished product depends more on it than is generally admitted or understood, and I consider that it is now the most promising field of experiment and research. To-day we hear less of the mysterious failures of steel than ever before, as when a failure occurs in the shop or elsewhere examination shows that in nearly all cases the trouble has been caused by improper treatment, and indicates the necessary improvements required in shop methods to avoid a recurrence of the trouble. In order to prove this, good material has been taken and similar failures have been produced at will by the same treatment. This has brought about in many shops as great an improvement in their methods of working the steel as in its manufacture. The net result of all this is that the consumer is to-day getting a better structure than ever before.

Recent careful scientific investigations have given us valuable information of the character and properties of steel, but there yet remains the important work of showing the direct relation between the results of these investigations and the every day processes and results obtained in our mills and shops.

There is considerable room for improvement in our ordinary methods of testing structural steel. The conditions under which tests are made should be reduced to a standard as regards the pulling speed and the relation of the width of test piece to thickness of the material. About three widths would be sufficient to cover all ordinary thicknesses, and they could be used without materially increasing the cost of the present methods of preparing test pieces. We also need some simple machine for making impact tests, as our ordinary tension tests do not give us all the information required as to the quality of the material to resist shock.

Too much importance is paid to the quench bends. In some cases the cold bends have been entirely omitted, and the quench bends considered a reliable test as showing the quality of the material. Now this is all wrong, as soft steel which has been finished at too high temperature, and thus rendered brittle, so that it will not stand the ordinary cold bends, may be restored by the heating, and the carbon being so low that the subsequent quenching does not harden this class of material, it then bends 180° flat on itself. Material accepted under these conditions has failed under subsequent shop work. Such material would have been rejected at the mills had the ordinary cold bends been made.

Mr. Webster then refers to export specifications, quoting from his recent paper, which was given in the "Engineering and Mining Journal" for October 22d, 1898.

In September he read a short paper before the American Branch of the International Association for Testing Materials, calling attention to the manner in which our manufacturers are handicapped by specifications for export material, and he is pleased to state that they have decided to appoint a special committee to investigate and report on the use of basic steel for bridges, and the use of steel for rails, containing up to 0.10 per cent. phosphorus.

*Abstract of paper read before the Franklin Institute, Philadelphia, November 23d, 1898.

THE WYOMING COPPER REGION.

Written for the Engineering and Mining Journal by J. C. Kennedy.

The Sierra Madre, Continental Divide or Main Range of the Rocky Mountains, enters the south boundary of Wyoming about midway of its length. The rather high and somewhat rugged character of the range at the north boundary of Colorado extends to a point near the old Bridger Pass, not far from the south line of Town 17 North, Range 88 West, where the range flattens out and is covered, often to near its crest, with the later sedimentary formations. From near Bridger Pass south-southeasterly to the south line of Town 11 North in North Park, Colo., a longitudinal distance of some 50 miles, the numerous fissure veins of the main range and its spurs almost everywhere bear a greater or less amount of copper ore. The copper belt is about 5 miles wide at its northerly end and some 20 miles at its southerly extension. The axis of this belt does not conform to the crest of the range, and is not parallel to it, though approximately so in places. It lies on the west side of the range at the north, crosses it at or near the head of the south or main fork of Battle Creek, and in its southeasterly course diverges further and further to the eastward of the crest of the range, terminating near Independence Mountain, an isolated, mountainous ridge at some distance from the main range in North Park, Colo., and the site of somewhat extensive hydraulic placer work. Some copper ore is found near the mouth of Big Creek, only 3 miles from the Platte River, near the south line of Carbon County, Wyoming, and at a comparatively low altitude.

With the exception of two or three claims, nearly all the development of these copper veins has been done during the past 18 months, and most of it during the past three months. The most promising portion of the copper belt, and that where the most development has been done, is known as the Battle Lake District, lying mainly in Town 14 North, Range 86 West. This embraces that portion of the crest of the range and its spurs lying between the headwaters of the two forks of Battle Creek and the Sandstone, on the west side of the range, which empty their waters into Snake River, and the headwaters of Jack Creek, North and South Spring creeks, Cow Creek and Calf Creek, on the east side of the range, all tributaries of the North Platte River.

The district takes its name from a small lake near the head of Battle Creek, 1½ miles west of the crest of the range, and but a short distance from the Rambler or Doane Mine, the oldest and most developed claim of the whole mountain region in question.

The formations exposed in that portion of the range embraced in the Battle Lake District are mainly the granitoid rocks—syenite, gneiss, protagene, talcose and mica schists and quartzites. The summit of the range is generally rounded, with higher points sometimes capped with quartzite and sometimes consisting of either syenite or schist. On the flanks of the range, more prominent on the westerly side, quartzite is quite common. At a distance to the southwest of Battle Lake, between it and the North Fork of Snake River, is a large area in which a red, feldspathic granite is the country rock. It is popularly supposed that a diorite dike, some 300 ft. in width, extends for several miles along the range, and that the principal veins are connected with it. Diorite certainly exists there; some of it closely resembles the diorite of the Lake Superior copper region, but is less firm in texture. From the conditions found in the lower workings of the Doane Mine and from surface observations, the writer is inclined to believe that the diorite occurs rather in the shape of laccolite bodies, breaking through the surface in places, usually through the quartzite or between schist and syenite, and in other places occurring as intercalated beds between quartzite and metamorphic schists and the granites. Many of the more important veins appear at the surface in quartzite, but near the contact between quartzite and the schists. This is the case with the Doane, the Haskins and the Ferris-Haggerty properties. Others occur between schist and syenite, or between diorite and the schists and syenite.

The Rambler Mine, owned by George Doane and William Heathcote, was located some 16 years ago by Mr. Doane. It is situated on the west side of the range, about 1½ miles from the summit. Up to within two years only a small amount of work was done for two or three months annually. It has a shaft 250 ft. in depth, with a tunnel about 150 ft. in length intersecting the shaft at 100 ft. from the surface. At the mouth of the tunnel is an ore house and a larger house containing shop, etc. In 1897 hoisting and pumping machinery was put in, which has been replaced the present year by similar machinery of greater capacity. The boiler is located at the mouth of the tunnel, the steam being transmitted through the tunnel to the engine and hoist in a station cut at the intersection of tunnel and shaft. Wood is used as fuel, but a road is now being constructed to the coal fields of the Savery, some miles to the southwest.

The ore near the surface occurred mainly in the shape of a chimney, but as depth was attained stringers of ore came in at the sides, while now, near the bottom short drifts indicate the proximity of a vein in diorite. The ore is high grade and mainly melaconite or black oxide of copper, with some malachite and chalcocite, and less often cuprite. During 1897 a considerable tonnage of this ore was hauled 65 miles to the Union Pacific Railway at Fort Steele, Wyoming, and shipped to Chicago, with gratifying profits. Some 15 miles of this distance was over a mountain road, opened for this mine alone, and cut for considerable distances through heavy timber. During this season, since the middle of June, the work at the mine has mainly been the installation of machinery, the straightening of shaft and tunnel and other dead work; but a car-load or more of ore, mainly black oxide, is in the ore house, and will be shipped soon.

The Axis Mining Company, composed of W. L. Evans and others, has several promising claims a short distance to the west of the Rambler Mine. They are among the older locations of the district, and show considerable development work. One of them is equipped with hoisting machinery and has a fair showing of ore, but none has been shipped.

The Haskins properties are located 4 miles northwest of the Rambler, and are on the west slope of the range, not far from the summit. They

are owned by W. B. Haskins, Maj. Alers and other Rhode Island people. The west side of the summit at this point, as well as the west flank of the range, is capped with quartzite. This, at its foot at the mine buildings, terminates in an outcrop of schist. There are three or four parallel veins appearing at the surface in the quartzite, near its junction with the schist. The strike of the veins is a little west of north and their dip is to the west. The development work consists of a shaft, about 100 ft. in depth, over which is a commodious shaft house and stable, and a tunnel, 90 ft. in length, intersecting the shaft at 30 ft. from the surface. The shaft starts in quartzite and cuts three or four veins on their dip, some of which have been drifted upon for a short distance. The tunnel starts on the contact between quartzite and schist, and turns to the right or east into the quartzite, cutting two veins. Hoisting is done with a horse whim. This property has connected with it the best and most numerous buildings of any in the district. The ore is mainly malachite and chalcopyrite in quartz and quartzite. No ore has been shipped. While that seen by the writer is not of high grade it is said to be improving of late. The Haskins claims are comparatively recent locations, most of the work on them having been done during the present season.

The Rudefeha claim, owned by Geo. Ferris, Ed. Haggerty and Robert Beal, is located about 6 miles northwest of the Rambler, on the west slope of the range, about ¾ mile from the crest and near the head of the north fork of Battle Creek. This was located in 1897, and most of the work has been done upon it in the last two months, when a body of high grade sulphide ore was disclosed. The main shaft is about 50 ft. deep, and the ore, which containts no silica, occupies the whole width of the shaft. One wall of the vein is called schist; but is more properly

DOANE MINE, BATTLE LAKE DISTRICT, WYOMING.

quartzite of a schistose character, much of the quartzite of this section being thin bedded and schistose. No drifting has been done, and the other wall is not reached at present. The ore, when in masses, is mainly dark-blue in color and appears like covellite, but contains a percentage of iron. It seems to be nearer bornite or bornhardite in composition. Around the masses of ore and at one side of the shaft is material appearing like pulverized chalcopyrite, which is shoveled like sand into the hoisting bucket, and which carries a good percentage of copper. Hoisting is done with a horse whim. Ore is now being shipped.

Besides the claims briefly described, there are at least 10 others in the district which are considered good prospects. Among these may be mentioned the Allen; the Portland, owned by W. C. Ledbetter and others; neighboring claims owned by Frank Hunter; the Doctor and other prospects. After some experience in the copper-producing sections of the Southwest and elsewhere, the writer feels safe in predicting that the Battle Lake District will possess several producers of copper in the near future. In other parts of the copper belt outside of this district, copper occurs usually in quartz veins in the shape of carbonates and sulphides, such as malachite, chalcopyrite and chalcocite.

Timber, consisting principally of pine and spruce, is abundant on the less rugged slopes of the range, especially on the eastern side. Near the road leading from Saratoga to the Rambler Mine, about a mile east of the crest of the divide, Sherman Ludwick and partners have opened a large body of iron ore, excellent for flux. The Omaha & Grant Smelter, at Denver, has offered its owners $4 premium above its gold contents; but cost of transportation prevents its use at distant smelters at present. There is a considerable amount of iron ore at other points in the copper belt. At the foot of the range, on either side, and at other points nearer its crest, limestone abounds. At a further distance from the crest of the range, on either side, excellent bituminous coal exists, and is mined. A 40-ton matting furnace, erected at some point economically situated for fuel and fluxes, would shortly have an abundant supply of ore, and should prove profitable, the high cost of transporting ores from the region furnishing a protective tariff for the industry.

MISSOURI COAL MINES.

An advance statement from Jefferson City, Missouri, says that the twelfth annual report on the coal mines of Missouri for the fiscal year ending June 30th, 1898, prepared by State Coal Mine Inspector Charles Evans, will show many gratifying features associated with the year's work. Briefly stated, some of these features are: A largely increased production, a smaller percentage of accidents, the condition of the mines more healthful and safer than at any time in the mining history. The feeling between operators and miners never was better, while strikes have been few, unimportant and simply of a local nature, with no tendency toward a general strike at any time. This state of feeling is attributed to a better understanding of the true conditions existing in the coal trade, and the fact that there has been no perceptible change for the last five years in the price paid for mining. Missouri coal operators, judging from their treatment of the miners, show a broader and more liberal spirit than is found exhibited by operators elsewhere.

In this State, the report says, the operator apparently realizes the fact that below a certain point in the price paid for mining it is impossible for the miner to support himself and family, and, the price having reached such a point, there it has stopped, although the selling price of coal all over the entire country has been downward for some years past. On the other hand, the miners understand the nature and character of the competition that the operators have to contend with, chief among which is the very low price paid for mining in the State of Illinois, and they are disposed to be content.

While the demand for coal has been much greater, there has been no corresponding increase in the price received for the coal product—the average price received for the product this year being exactly the same as that of the year before.

The coal product for the fiscal year ending June 30th, 1898, amounted to 2,838,152 tons, leading last years' output by 408,764 tons. The average price per ton received at the mines was $1.10, making the aggregate value of the product $3,148,862, showing an increase over the former year of $464,105, or 17 per cent.

There were 377 coal mines of all descriptions operated all or during part of the year. This is a decrease in the number of mines as compared with last year, although there was larger output this year.

There were employed on an average during the winter months 7,025 miners and 1,520 other employes; while for the summer months the average was 4,994 miners and 1,243 other help, making an average for the whole year of 7,391—an increase over the former year of 799 men.

The total number of accidents was 36, of which 9 were fatal. The average number of tons of coal mined for each life lost from 1890 to the present year was 159,771. This year it was 315,130. This result is due largely to the many additional safeguards provided for miners and mines by the State mining law.

MINERAL IMPORTS AND EXPORTS OF SPAIN.—For the nine months ending September 30th the imports of fuel into Spain, as reported by the "Revista Minera," were 879,552 metric tons of coal and 188,396 tons of coke. The imports of metals were 1,132 tons pig iron, 4,295 tons wrought iron and 10,867 tons steel. Exports of mineral were in metric tons:

	1897.	1898.
Iron ore	5,291,354	5,134,301
Copper ore	628,344	669,566
Zinc ore	33,475	44,359
Lead ore	6,478	5,629
Salt	182,222	163,021

Exports of metals were: 34,377 tons pig iron (30,309 in 1897); 23,595 tons copper (27,099 in 1897); 133,702 tons lead (127,876 in 1897.)

QUESTIONS AND ANSWERS.

(Queries addressed to this department should relate to mining, metallurgy, chemistry, geology, mineralogy, machinery supplies, etc., preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot here undertake to give professional advice on problems requiring special investigation, and which should be referred to a consulting expert. Brief replies to questions will be welcomed from correspondents. While names will not be published, we request that all inquirers send their names and addresses. Anonymous questions will not be answered.—Editor E. & M. J.)

Solubility of Vaseline.—What are the solubilities of vaseline?—T. E.

Answer.—Vaseline is soluble in all proportions in chloroform, carbon bisulphide, turpentine, benzine, petroleum, ether and most of the distilates of petroleum. It is also soluble in warm ether and hot alcohol. From the latter it separates upon cooling in flakes.

Dry Placers.—Is there any successful working machinery for gathering gold from gravel deposits without using water? Are there any rich placer deposits in this country which are undeveloped because of the absence of water?—R. D. C.

Answer.—1. There are a number of devices for dry placer working, which have been more or less successful. Machines which have been used in the Altar gold field in Sonora, Mexico, were described in the "Engineering and Mining Journal," March 13th, 1897. Another, which is now on trial in Arizona, was described in the issue of March 26th, 1898. Any of the large manufacturers of mining machinery who advertise in the "Engineering and Mining Journal" can give you a list of such machines.

2. There are placer deposits in Arizona, in Southern California and elsewhere, which are not worked for want of water. Such deposits are found in many places, and it would not be possible to give a list of them.

Boston & Carolina and Boston & Texas Mining Companies.—1. Can you tell me anything of the "Boston & Carolina Copper Mining Company" advertised with capital stock of $2,500,000; Bickford & Richards, of Boston, Mass., probably backing it? What sort of deposits are they working upon and how large are these? 2. Also, "The Boston & Texas Copper Mining Company," of 11 Broadway, New York. What is their stock, how good is same, and what class of ores are worked?—L. P. B.

Answer.—1. The Boston & Carolina Copper Mining Company was organized early in the present year. It owns a tract of land in Granville and Person counties in North Carolina, in which there are said to be deposits of copper ore. The quantity of work done on the property so far has been very small, and there is no reliable information as to their extent or quality.

2. The Boston & Texas Copper Mining Company has an office in New York, but seems reluctant to give any information. Repeated inquiries have only resulted in a promise to give an account of the company's properties at some future time.

Mining Engineer.—1. About what would be the cost of taking a course in one of the best schools of mines? 2. What school would you recommend? 3. How long would it require, by close application, to acquire a practical knowledge of mining? 4. What books would you recommend for a student?—J. V. T.

Answer.—1. The cost of taking a course at a mining school varies very much, according to the location of the school. At the Columbia School of Mines in New York, or the Massachusetts Institute of Technology in Boston, for instance, a student's expenses, including his living, could not be much under $600 a year. At the Michigan School at Houghton, the Missouri School at Rolla, or the Colorado School at Golden, the cost might be reduced to half that amount, or say $300 a year. The cost of living is the principal item, as the charges for tuition are not usually large.

2. We cannot undertake to recommend any particular school. There are a number of good ones, the cards of several of which are found in our advertising pages; each has some special point of excellence. Your choice must be determined by the special branch which you would prefer to follow.

3. The usual course in the mining schools is three years. This is only the foundation, and to acquire a practical knowledge of mining you will have to enter on actual work in the mines. There are many things which cannot be learned in the schools and the combination of practical experience with theoretical knowledge is needed.

4. There are many good books, among which it is difficult to make choice. We might recommend Dana's "Minerals" ($1.50); Kemp's "Ore Deposits" ($4); Le Neve Foster's "Text-book of Ore and Stone Mining" ($10); Hughes' "Text-book of Coal Mining" ($6); Abel's "Mining Accidents and Their Prevention" ($4); Brough's "Mine Surveying" ($2.50); Cox's "Prospecting for Minerals" ($2); Bowie's "Hydraulic Mining" ($5); Beard's "Ventilation of Mines" ($2.50). These are only suggestions, and the student will be able to select from a much longer list as his reading advances.

Caloric Reduction Company—Carter-Walker Process.—1. Have you any knowledge of the Carter-Walker process of treatment for gold ores which is said to be in successful operation at Red Bluff, Montana, treating ores from the Golconda and Bessie properties? I understand this process was in use in Ontario, but the plant was destroyed by fire.—W. P. S.

2. Can you give me any information about the Caloric Reduction Company? The process, briefly, consists in grinding the ore to 80-mesh; roasting by passing through fireclay retorts; amalgamating by means of vaporized mercury; finally recovering amalgam in settling pans. The company claims to have successfully treated ores at Red Bluff in Montana.—J. V. D.

Answer.—Both these questions relate to the same matter. The process of the Caloric Reduction Company is substantially the old Carter-Walker dry process. In this the pulverized ore was roasted in retorts arranged in nests, the ore being forced gradually through these by means of slowly revolving screws. From the retorts the roasted ore passed through a pipe to the pans, vaporized quicksilver being at the same time forced up through the pipe so that it would, according to the inventor's claims, thoroughly permeate the ore and amalgamate the gold and silver. The amalgam was collected in the pans into which the pipe discharged. Although this process at first attracted some engineers, no successful economic results were obtained with it. The process is not by any means a new one; it was thoroughly tested in New York some 15 years ago by the late Mr. Riotte, and was described and illustrated in the "Engineering and Mining Journal" for April 19th, 1884. The use of volatilized mercury in amalgamation had been tried so long before, that even then it was not patentable. Mills to work with this process have been built in several places. They were all unsuccessful. In practice the vaporized mercury escapes more or less, and the result is that the men working in the mill are salivated.

With regard to the work at Red Bluff, in Montana, we are informed that the process was tried on the Golconda ores some years ago, but was not successful. Recently the Caloric Reduction Company took it up again, claiming that the process had been perfected, and is now operating it. There is no reason to believe that it differs materially from the Carter-Walker process, or that it will be any more successful.

PATENTS RELATING TO MINING AND METALLURGY.

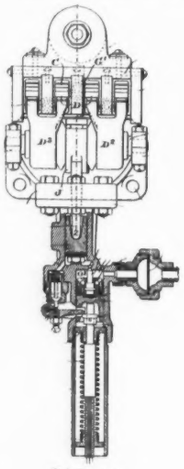
UNITED STATES.

The following is a list of patents relating to mining and metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending November 8th, 1898.

612,664. BRICK KILN. William F. Cook, Des Moines, Iowa. Combination of a furnace with a wall, a horizontal flue leading from the furnace and wall to the center of the kiln, a perpendicular flue in the centre of the kiln having an annular space from the bottom to the top, and openings at its bottom intersecting the annular space.

613,666. QUARTZ MILL. John T. Davis, San Francisco, Cal. Assignor of three-fourths to Frederick Milton Johnson, same place. In combination, a casing having a feed-opening at the top, a circular corrugated die enclosed, a rotary corrugated cylinder or die, placed centrally in the casing, and a series of corrugated grinding-rollers.



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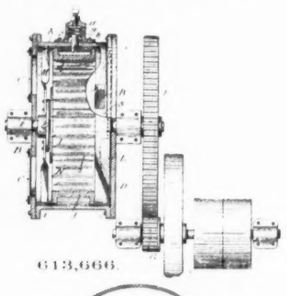

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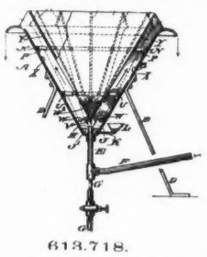
613,692. GOVERNOR FOR AIR COMPRESSORS. Sam H. Libby and William B. Potter, Schenectady, N. Y. Assignors to the General Electric Company, of New York. In a pneumatic governor of air compressors, the combination of a switch mechanism, a piston and cylinder for actuating the switch mechanism, an auxiliary piston and cylinder, a valve between the cylinders, a spring-supported pin actuated by the auxiliary piston for opening and closing the valve, a spring tending to maintain the auxiliary piston in its normal position, an exhaust valve connecting with the switch-actuating cylinder, a spring-pressed device normally closing the exhaust valve, and means controlled by the auxiliary piston for opening the exhaust valve.

613,691. VAPOR OR GAS TURBINE. Robert Lundell, New York, N. Y. A vapor or gas turbine having a series of buckets, a number of vapor or gas conveying nozzles adapted to convey vapor or gas thereto, additional nozzles surrounding the first-named nozzles and having connection with an exhaust chamber, in combination with a valve

and valve ports adapted to admit vapor or gas to the first-named nozzles in succession.

613,698. MINER'S KNIFE. Harry Martin, Salt Lake City, Utah. The combination with a pocket-knife handle and blade of a back-spring for the blade situated intermediate the edges of the handle, a cutting tool pivoted between the handle sides in rear of the back-spring, a seating tool also pivoted between the handle sides in rear of said back-spring, a spring tending to force outward the cutting tool and a trigger for holding it in closed position.

613,706. AMALGAMATOR. Jonathan McKelvey, David McKelvey and Charles H. McKelvey, Louisville, Ky. The combination of a U-shaped mercury-holding tube, a central vertical sluice-tube descending into the



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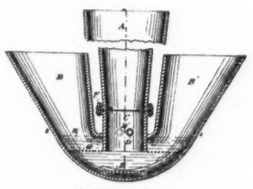

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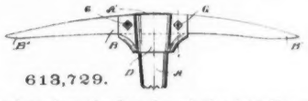
U-tube for a short distance; non-radial pipes for delivering water under pressure into the central tube in front and rear; a screen in the U-tube, and means for withdrawing amalgam.

613,718. AMALGAMATOR AND DISTRIBUTOR. Julio H. Rae, Philadelphia, Pa. An inner and an outer stationary vessel, separating rings supported on the inner periphery, and provided with blades, extending radially from the inner vessel and supported on the rings, a supply-pipe leading into the lower end of the outer vessel and a force-pipe leading into the supply-pipe.

613,728. METHOD OF AND APPARATUS FOR PURIFYING CRUDE OILS. Martin Shively, Rising Sun, Ohio. The method consists of delivering jets of hot water tangentially upon the surface of the oil contained in a tank to cause the oil to rotate, then allowing hot water to pass down through the rotating body of oil to simultaneously heat it and absorb and precipitate the impurities partly separated by the rotary movement of the oil.

613,729. PICK. George Singleton, Jersey City, N. J. A head B of limited section in the middle; a handle A, with a groove at the head ends; a



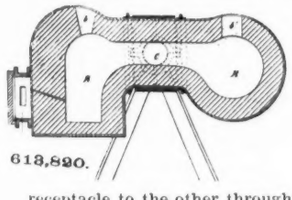
613,729.

socket D embracing the head and the handle; the head B being secured to the socket D by the bolts GG.

613,751. MINE GATE. Newton K. Bowman, Lawrence, Ohio. Assignor to Alvin Hurford, Canton, Ohio. A gate operated by levers and cords connected with a rock shaft placed under the track, so that the mine cars passing over the track will open and close the door.

613,767. APPARATUS FOR TREATING AURIFEROUS OR OTHER ORES. Thomas R. Jordan, New York, N. Y. Assignor to the Anglo-American Reduction Company, same place. The combination with a vertical spindle and means for rotating the same, of a series of dishes concave throughout and mounted on the spindle with their peripheries eccentric to the latter, and having varying degrees of concavity.

613,820. CONVERTER. Toussaint Levoz, Brussels, Belgium. An apparatus for making iron and steel consisting of two receptacles R, R', a passage c connecting them, the rotary supports for the receptacles whereby upon tilting the apparatus the metal will pass from one



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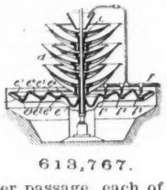

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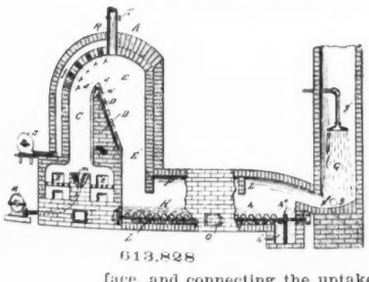
receptacle to the other through the upper passage, each of the receptacles having an opening above it through the top of the casing and a winding chest and tuyeres in connection with the receptacle R, the arrangement being such that the heat of the blast from the receptacle R passes through the passage c to heat the metal in the receptacle R', and passes through the opening above the same.

613,828. FURNACE FOR TREATING ORES. Jacob J. Stover, Newton, Mass.; Frank Martin, Boston, Mass., and George O. Eaton, New York, N. Y. Assignors to the United Mill and Furnace Company, of Montana. A furnace comprising a vertical uptake-flue, fireplaces at its base, means for introducing ore above the fireplaces, a vertical downtake-flue parallel with the uptake-flue, an enlarged flue section or chamber having its inner wall provided with an inclined



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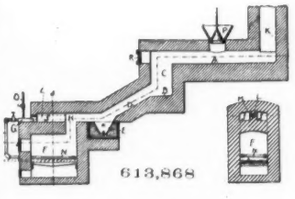


613,868.

face, and connecting the uptake and downtake flues at their tops, a chambered division wall between the uptake and downtake flues, having means for the reception and distribution of air into the enlarged chamber, and a covered ore receiver or water tank, communicating with the bottom of the downtake, and leading to a smokestack.

613,864. PHOSPHORESCENT ELECTRIC LIGHTING. Daniel M. Moore, Newark, N. J. Assignor to the Moore Electrical Company, New York, N. Y. The combination with a vacuous receptacle, of a frame consisting of aluminum plates joined together by rods of aluminum, the frame being held in place by portions of the walls of the receptacle forced inward at the sides of the plates, a shaft journaled in bearings in this frame, a break-wheel on the shaft, a contact-brush bearing thereon, magnet armatures also on the shaft, which has a continuous motion.

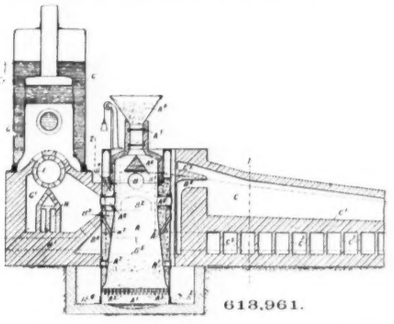
613,868. SMELTING FURNACE. James H. Ross, Tacoma, Wash. Filed December 15th, 1897. The combination with the roasting-hearth, matting-chamber, runway and smelting-chamber, of a firebox communicating with a space over the smelting-chamber, combustion-flues extending over the firebox and opening into a space at H into which the flames from the firebox pass on their way to the space over the smelting-chamber, a partition separating the combustion-flues from each other and formed with an air channel leading from outside of the furnace to the space at H, hydrocarbon burners discharging into the combustion-flues, an oil-supply pipe and a steam supply pipe leading to the burners.

613,880 and 613,881. GENERATING AND DISTRIBUTING ELECTRIC ENERGY. Charles M. Green, Cleveland, Ohio. Assignor to the General Electric Company, of New York. A system of electric generation and distribution consisting in generating electromotive force in two or more sets or groups of armature-coils of a closed-coil armature and in distributing the electromotive force so generated in separate external circuits having translating devices included therein, the external circuits being connected between and included in series with the sets or groups of armature-coils.

613,907. COMPOUND FOR MAKING POROUS BODIES. Henry E. Merrill, Akron, Ohio, Assignor to the E. H. Merrill Company, same place. A porous filtering body formed of common stoneware clay and whiting in the proportions of from 10 to 60 parts of each substance, according to the porosity or density of tube desired, and burned or baked.

613,937. POWDERED COAL FURNACE. William H. Peck and David R. W. Patterson, Pittsburg, Pa. A furnace comprising an outer casing and an inner casing, the latter supported by a central and intermediate walls and a spreader or distributer located in front of the central walls and engaging in the feed or supply pipe for distributing fuel evenly over the combustion chamber.

613,961. GAS-HEATED FURNACE. Charles Bond, Whifflet, Scotland. The combination with the furnace of a gas-producer having its combustion chamber surrounded by a water chamber to form a steam

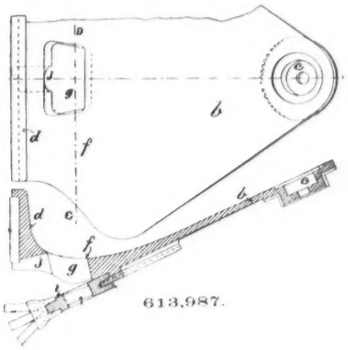


613,961.

generator, gas-holding chambers and passages connecting with the producer and with the furnace, air-heating chambers below the hearth of the furnace, and passages connecting the air-heating chambers with the furnace, and a steam boiler provided with smoke-consuming devices.

613,980. PROCESS OF ELIMINATING IMPURITIES FROM COAL, ETC. Edward M. Eidherr, Allegheny, Pa. This process for the elimination of impurities from coal or ores during the coking or roasting process comprises the introduction into contact with the raw material of glycerine and hydrochloric acid through the action of superheated steam.

613,987. COAL-CUTTING MACHINE. William E. Garforth, Altofts, England. The combination of an approximately triangular plate b having about its apex the bearing for the center or journal of the cut-



613,987.

ter-wheel with a plate d attached to the machine, both formed in one piece and with the triangular plate or portion b inclined to the plate or portion d in order that when the machine is horizontal the inclination of the plate b may approximate that of the coal seam.

614,012. PRIMARY BATTERY. Carl Koenig, Berlin, Germany. In primary batteries the provision of two or more pairs of alternate concentric elements with insulating pots between each pair and suitable exciting paste between each set of elements as a means for obtaining a fairly constant high voltage current from a cell of small size.

614,023. MANUFACTURE OF METALLIC TUBES. Harry Perrins, Smethwick, England. A piled hollow bloom composed of outer sections, having flat upper and lower surfaces and internally-curved sides, the sections being separated horizontally from each other and inner sections correspondingly shaped and separated vertically from each other.

614,041. COMPRESSED AIR LOCOMOTIVE. Samuel M. Vauclain, Philadelphia, Pa. The combination in a compressed air locomotive, of a storage reservoir, an auxiliary reservoir connected thereto, a reducing valve in the connection and a hot water drum inclosing the auxiliary reservoir.

614,044. CONVEYING AND HOISTING APPARATUS. John F. Ward, New York, N. Y. A cable or track way carriage provided with a device moving in or on the carriage and means for operating the device to both engage and disengage a rope carrier and to control and retain the same against accidental displacement.

PERSONAL.

Mr. M. B. Girard, of Globe, Ariz., is in San Francisco.

Mr. G. A. McElfresh, an oil well owner, of southern California, is in San Francisco.

Mr. J. P. Rathburn, mine owner, of Winnemucca, Nev., is in San Francisco.

Mr. E. E. Chase, of Denver, goes to Mexico next week to examine mining property.

Mr. Frank A. Smith of Detroit, Mich., is visiting mining properties in which he is interested in Arizona.

Mr. David McClay of Glasgow, Scotland, a manufacturer of steel ship plates, is visiting Pittsburg, Pa.

Mr. H. L. Swain, superintendent of the Ybarra Mine, Calmalli, Lower California, Mexico, is in San Francisco.

Mr. George W. Pierce, of Boston, visited Central City, Colo., last week, to look after his mining interests.

Mr. Charles F. Rand, president of the Spanish-American Iron Company, sailed for Santiago de Cuba on November 24th.

Ex-Senator Tabor, now postmaster of Denver, was in Central City, Colo., looking after his mining interests last week.

Capt. McDonald, of San Francisco, Cal., a well-known mining man on the Pacific slope, visited Gilpin County, Colo., last week.

Mr. Chas. R. Kelsey has been appointed Superintendent of the Commonwealth Gold Mining and Milling Company, of Rocky Bar, Idaho.

Mr. Benedict Crowell of Cleveland, O., is on his way to Johannesburg, Cal., to examine a gold property for Cleveland and Chicago parties.

Messrs. Charles H. Merrill, recently of Ridley Park, Pa., and F. A. De Costa have opened an office as mining and consulting engineers in Santiago de Cuba.

Mr. J. H. Susmann, for a number of years mining engineer for the Canadian Pacific Railway, will sever his connections with the company November 30th.

Mr. James M. Wilson, superintendent Yukon District for the Alaska Commercial Company, passed through San Francisco recently on his way to Belfast, Ireland.

Mr. Fred Duclos, manager of the Mexican Ore Company, has returned to Chihuahua, Mexico, after a two months' visit to New York, Saratoga and other Eastern points.

Mr. C. H. Thompson has been for two weeks past at the laboratory of the Ashland Coal and Iron Company, at Ashland, Ky., making tests of iron and manganese ores for the Potts Valley Iron Company, of Virginia.

Mr. Henry C. Jenkins has been selected by the Victorian Government for the position of metallurgist. In 1894 he was appointed instructor in assaying at the Royal School of Mines, in the place of Dr. Edwin J. Ball.

Mr. Arthur Thompson, a mining man, of Liverpool, Eng., passed through Everett, Wash., last week, on his way to England from the Duncan Lake, B. C., country, where he has lately bought a galena property.

Prof. Agassiz, of Harvard University, is in San Francisco with a corps of young scientists, who will accompany him to the South Sea Islands, where they will make a complete study of the fauna and flora of the islands.

Mr. J. F. Hopkins, manager of the Sleepy Hollow, Terror and other mines, and who is also largely interested in the Eagle and New York mills, has returned to Central City, Colo., from a seven weeks' trip in old Mexico.

Professor von Oettingen, of Leipzig, has received official permission to proceed to the Transvaal with the object of investigating the suitability of electric methods for the extraction of gold in the Johannesburg District.

Count von Hacke, Baron von Hermann, Capt. von Rebeur Parchwitz and Baron von Bredow, of the German Embassy, Washington, were recently shown through the Cumberland coal mining region by President C. K. Lord, of the Consolidation Coal Company.

Messrs. August Dietreux, Fritz Luermann, Paul Mossot and Jos. Balleydier, who represent the famous French company Société des Forges de Chatillon, Commentry et Neuves Maisons, that is about to build a large modern steel plant near Nancy, in the east of France, are visiting this country.

Mr. W. P. Rend, of Chicago, Ill., and Mr. J. P. Rend, of Columbus, O., president and vice-president respectively of W. P. Rend & Company, extensive coal operators in Pennsylvania and Ohio, were through the Kanawha Valley, W. Va., coalfield last week, getting men to go to their Pennsylvania mines.

Mr. A. L. Williston of the Ohio State University has assumed the directorship of the Department of Science and Technology in the Pratt Institute, Brooklyn, succeeding Prof. C. L. Richards, who has become the head of the Manual Training Department of the Teachers' College, New York City. Mr. Williston is a graduate of the Massachusetts Institute of Technology.

Prof. H. L. Smyth, of Harvard University, in company with James Underhill, of Idaho Springs, Colo., has just completed the examination of the Contention Mine, in the San Juan section of Colorado. Prof. Smyth now goes to Boulder, Colo., in company with Prof. Pumpelly to examine some copper showings in that section.

Mr. Jeremiah Head, of London, representing the English owners of the Otis Steel Company, has returned to England, after a short stay in Canada and Cleveland, O. Mr. Head, and his son, Mr. A. P. Head, have gathered material for a paper to be presented in February before the Institute of Civil Engineers, in London, on the Lake Superior iron ore region.

Mr. W. M. Brewer has been appointed consulting engineer of the British Pacific Gold Property Company, Limited, a new concern organized by capitalists in Eastern Canada and British Columbia. Mr. Brewer will early in January establish his office in Victoria, B. C. We can congratulate the company on its selection of Mr. Brewer, an experienced, careful, conservative and honest expert, who will not deceive the company himself or allow others to do so.

OBITUARY.

John E. Graeff, one of the original individual operators in the anthracite coal trade in this country, died in Philadelphia November 18th, aged 78 years. He was all his life connected with the coal trade, and was a member of the firm of Graef, Wilcox & Company, of New York and Philadelphia.

John E. W. Keely, inventor of the Keely motor, died in Philadelphia Nov. 18. He was born in 1837, and became a cabinet maker. In 1873 he burst into notoriety as the discoverer of a new form of energy. A company was formed and Keely secured funds to continue investigations. The results were too indefinite to suit the stockholders of the Keely Motor Company, and Keely was abandoned. In 1881 other parties took an interest in Keely and he brought out a new discovery which he claimed was different from the one controlled by the Keely Motor Company. Litigation ensued, and Keely, though ordered in court to explain his secret, refused to do so. Experiments continued through the next 10 years with several public exhibits kept up interest enough to secure Keely whatever funds he needed, but he never put his invention into such shape that it could be used practically, and died without taking out a patent. The principle upon which the new discovery was based was that of intermolecular vibration of the ether, to which he gave the name "Apergy." He claimed that there was a perpetual flow of vibration through space, polar and depolar, or positive and negative, and that it was only necessary to produce a machine which would respond to these vibrations to secure the power.

SOCIETIES AND TECHNICAL SCHOOLS.

University of California.—The Board of Regents have accepted the resignation of President Martin Kellogg and appointed him emeritus professor of Latin. The resignation goes into effect March 1st, 1899.

Association of Agricultural Chemists.—The association, at its annual meeting in the City of Washington, elected officers as follows: President, R. C. Kidzie, of Michigan; Vice-President, B. W. Kilgore, of Mississippi; Secretary, H. W. Wiley, Washington. Executive Committee—H. J. Wheeler, of Rhode Island; M. E. Jaffa, of California, and the officers.

Yale University.—President Timothy Dwight has tendered his resignation, to take effect at the end of the university year. Prof. George J. Brush, director of Sheffield Scientific School, has also presented his resignation. It has been accepted and Prof. Brush appointed professor emeritus Prof. R. H. Chittenden has been elected Director Brush's successor. The report of William W. Farnam, treasurer of Yale University, shows that the increase of the permanent fund of the university the past year has been $57,544. The general funds amount to $722,358, and other special funds make a total of $1,635,550. The academical funds aggregate $1,607,890; the funds of the theological department amount to $649,122, and the Sheffield Scientific School fund is $406,312; the law department has funds amounting to $117,347, and the art school has $115,627.

American Chemical Society.—The society will hold its annual meeting in New York City late in December. The following committees have been appointed: General Committee—W. McMurtie, Durand Woodman, A. C. Hale, J. H. Wainwright, A. A. Breneman, C. A. Doremus, C. F. McKenna, A. R. Leeds, Henry Morton. Committee of Ways and Means—C. F. McKenna, W. H. Nichols, E. R. Hewett, W. J. Matheson, M. Toch, M. E. Waldstein, G. N. Williamson, H. Schweitzer, T. J. Parker, E. J. Hicks. Committee on Press and Printing—A. C. Hale, D. O. Haines, J. A. Myers, J. A. Mathews, W. O. Blank, J. H. Stebbens, Jr., M. D. Sohon, W. Coblentz. Committee on Hotels and Transportation—J. H. Wainwright, E. G. Love, E. J. Lederle, E. C. Uhlig, A. A. Breneman, E. E. Smith, S. Bookman, J. H. Yocum. Committee on Entertainment and Excursions—C. A. Doremus, H. B. Baldwin, O. Amend, A. H. Elliott, L. H. Reuter, Geo. C. Stone, A. P. Hallock, G. H. Davidson, G. A. Prochazka, C. Richardson. Committee on Meetings and Programmes—Durand Woodman, A. C. Hale, C. E. Munsell, M. T. Bogert, J. S. Adriance, F. E. Dodge, Thos. B. Stillman.

American Chemical Society—Northeastern Section.—The section at its meeting in Boston on November 18th, discussed "Gold in Sea Water." Dr. A. M. Comey read a paper that treated the matter historically. He told of his attempts to fix upon the earliest reference to the subject in chemical literature, principally on a rumor that it was mentioned in a paper before the American Association in 1866, but no such paper could be found. Sonstadt gave the results of some experiments in 1872, where he stated that the amount of gold found in sea water was "less than" a grain to the ton. On this statement was based for many years the popular formula that there was a grain of gold in a ton of sea water. Since 1890 several chemists have examined the question, notably Liveridge, in New South Wales, whose results were not very concordant, and some Norwegian chemists, whose work appeared to be of a higher cast. The net results showed that there was about 1-15 or 1-16 of a grain of gold to the ton of sea water. Prof. Henry Carmichael, who has been engaged by certain capitalists to investigate the matter, reported that, in so far as he had been able to find out, it was impossible to produce gold at Lubec without the products costing much more than the effort was worth. One-tenth of a mill of gold could be produced from about 1 ton of salt water at an expense of about 10c. He explained the different methods of extracting this gold on a blackboard, the cheapest of which was by electricity, so far as known. The following councilors were elected for the ensuing year: D. H. P. Talbot, John Alden and A. D. Little.

INDUSTRIAL NOTES.

The steamship "Lord Charlemont" recently loaded 2,500 tons of steel rails at Canton, Md., for use on a railway in Ireland.

The Columbus Machine Company, Columbus, O., has arranged to take the exclusive manufacture of the Brown gas and gasoline engine.

The Harrison Safety Boiler Works of Philadelphia, recently shipped a 6-in. horizontal Cochrane separator to the Compania Cervecera, Toluca, Mex.

The new rolling mill to be built by the Pittsburg Reduction Company, at New Kensington, Pa., will contain six trains of 10-in. rolls of the Belgian system.

The Merrill Pneumatic Pump Company.—New York has just received several good orders from the mine trade, including one from the Consolidated Coal Company for 10 pumps of 150 gal. capacity each.

The Vulcan Iron Works of Toledo, O., is building a very large bucket dredge for a placer gold mining company in Idaho. The company is also building two dredges for use in the phosphate beds near Charleston, S. C.

The Philadelphia Furnace at Florence, Ala., has been sold to Eugene Zimmerman of Cincinnati and B. F. Nichols of Bessemer. The price is reported as $100,000. The furnace has been idle three years, and has a capacity of 200 tons daily.

Some recent orders filled by the American Safety Lamp and Mine Supply Company, of Scranton, came from the following companies: Pleasant Valley Coal Company, Colo.; Choctaw, Oklahoma & Gulf Railroad Company, McAlister, Indian Territory; Carbon Hill Coal Company, Carbonado, Washington, and H. C. Frick Coke Company, Pittsburg, Pa.

The Harrisburg Foundry and Machine Company, of Harrisburg, Pa., is to build a new plant after plans prepared by General Manager W. R. Fleming. A brick and steel building, 260 by 170 ft. will cover the various department now occupying several detached buildings. The plant, it is stated, will cost $200,000, and will be equipped with electric and steam appliances of latest design.

Francis Smith & Company, of San Francisco, have moved their pipe manufacturing plant from Beale Street to Townsend Street. The

business offices still remain at 46 Fremont Street. The new works will have four times the capacity of the old ones. The firm reports shipments of pipe to the Hawaiian Islands for a sugar plantation, and to Topia, Durango, Mexico, for the smelter controlled by Miller & Sibbly.

The Berlin Iron Bridge Company of East Berlin, Conn., are erecting for the Waterbury Manufacturing Company, Waterbury, Conn., a new blacksmith shop two stories high. The building is to be of fireproof construction throughout. The floor consists of concrete on corrugated iron arches, carried by steel beams and columns. The roof has steel trusses supporting the covering of corrugated iron lined with patent anti-condensation lining.

The management of the new Cambria Iron and Steel Company—which has leased the Cambria Iron Company, at Johnstown, Pa.—is precisely the same as that of the latter. The directors of one are the directors of both companies. They are J. M. Bacon, D. Reeves, R. F. Kennedy, Powell Stackhouse, B. F. Wood, J. Lower Welsh, E. T. Stotesbury and J. W. Townsend, all of Philadelphia, and C. S. Price, of Johnstown.

The Jeffrey Manufacturing Company, of Columbus, O., has recently taken up the manufacture of the Columbian Separator-Screen and Bolter, and has erected an experimental machine at its works for testing such material as may be sent for that purpose. Parties interested in the screening or separating of cement, cement clinker, ores, phosphate rock, marble, fertilizer materials, bone ash, plaster Paris, sand, coal, earth, clay, etc., can have tests made by addressing the manufacturers.

Recently, at the Hocking Valley docks at Toledo, O., the steamer "Superior City," of 6,000 tons capacity, arrived for coal. She commenced loading at 6:15 a. m. and finished at 11:45 p. m., receiving a total of 5,923 tons. Allowing two hours' delay for dinner and supper for the workmen, this shows actual working time of 15½ hours, or at the rate of 382 tons per hour for the total time. For the day's work of 11 hours there were loaded 175 cars, or 432 tons per hour. The Brown rapid coal loading machine did the work.

An important contract is reported between the Wm. Cramp & Sons' Ship and Engine Building Company, of Philadelphia, and the Stirling Company, by which the latter company is to furnish such water tube boilers as the Cramp Company may require for the vessels built in its yards in the next 10 years. The first order under the contract has been given, calling for 40,000 I. H. P. of boilers for the battleships and cruiser now building at Philadelphia for the Russian Government. The Niclausse boiler will be built for the Russian vessels. The Stirling Company has also acquired the right to manufacture the Yarrow and Mosher types of boilers, designed for lighter craft—torpedo boat destroyers, torpedo boats, and dispatch boats.

TRADE CATALOGUES.

The B. M. Calkins Company, Los Angeles, California, issues a neat catalogue describing its system of assay furnaces and attachments. These furnaces are the result of a long course of experience in the assay office, and have been improved as constant use suggested. Their different points are well described in the catalogue, which is well worth the attention of assayers.

Messrs. Oglebay, Norton & Company, of Cleveland, Ohio, and Philadelphia, issue a very neat memorandum book. One-half the pages are left blank for notes, and on the alternate pages are given analyses of iron ores from the mines of the Lake Superior region. One can find here the composition, from cargo samples, of ore from any mine on the Marquette, Menominee, Gogebic, Vermilion and Mesabi ranges. Some analyses of Cuban iron ores are also given. It is exceedingly convenient for reference, and additional facts can be noted on the blank pages.

The Carborundum Company issues a handsome pamphlet of 64 pages describing the nature and uses of carborundum, the methods of manufacture, and the company's works at Niagara Falls. The applications now include all those for which emery and similar abrasives are used, besides others for which this material is especially adapted. Besides the powder, which is now much used for polishing stone and similar work, wheels of all kinds and shapes are made; sharpening stones and grinders; cloth and paper for polishing and finishing work of all grades; in short, all the uses for which abrasive material of high quality can serve.

The latest edition of the catalogue issued by the Pelton Water Wheel Company is an improvement on any of the earlier issues. Besides descriptions and illustrations of the Pelton wheel, it shows many applications. We find illustrations of air-compressors, pumps, dynamos, ventilating fans and other machines run by the wheel, either directly or through the intervention of belting or gearing. Besides this descriptive matter, there are many useful tables and formulas relating to water power, the measurement of water, strength of pipes, friction, transmission of power, etc.; making it a handy book of reference as well as a catalogue.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

Oil Production in October.—The reports of the pipe line companies show a marked falling off in stocks during the month, though development work has been very active.

The receipts were 3,952,617 bbls., which is 24,727 bbls. less than in September. Of the total, 2,487,837 bbls. were Pennsylvania (showing a decrease of 37,195 bbls.), and 1,464,780 bbls. Ohio oil (showing an increase of 12,163 bbls). The deliveries amounted to 5,026,393 bbls., an increase of 408,657 bbls. The increase was made up of 254,228 bbls. of the Pennsylvania and 154,429 bbls. of the Ohio product. Of the total, 2,839,481 bbls. were Pennsylvania and 2,186,912 bbls. Ohio oil. The stocks at the close of the month amounted to 27,539,843 bbls., a shrinkage of 1,073,915 bbls. The stock of Pennsylvania oil was 11,240,712 bbls., showing a decrease of 351,783 bbls., and of Ohio oil 16,299,131 bbls., showing a decrease of 722,132 bbls. The decrease in total stocks since the beginning of the year amounts to 6,012,588 bbls., an average of 601,258 bbls. per month.

ALASKA.

Copper River Mining and Transportation Company.—The Superior Court of Washington has appointed A. W. Buddress receiver of this company. The company met with numerous misfortunes in the early stages of the Copper River rush. Its steamer, the "Townsend," broke down twice and was compelled to return, and other vessels were chartered to comply with freight and passenger contracts. The "Townsend" caught fire and was burned to the water's edge, and the company went into insolvency. The present assets of the company are not known.

ARIZONA.

Pima County.

Oro Mining Company.—This company, near Tucson, is replacing old machinery with new, and development is being pushed. At a depth of 220 ft. a large ore body is reported. Sinking will continue until the 500-ft. level is reached. The company is employing 45 men.

CALIFORNIA.

Amador County.

Kennedy.—The scarcity of water in the Blue Lakes reservoirs has made it necessary for the mine to use steam, which it is doing at the present time at both hoists.

Zeile-Jackson.—According to a local paper sinking at the Zeile continues. The ground is hard slate, but is breaking very well, with the result that about 2½ ft. is made daily, and not a great deal of lagging is needed to secure it. Sinking began at 1,160 ft. and 150 ft. have been sunk, and 100 ft. more will be sunk before drifting for crosscutting is commenced. From 15 to 20 stamps are operated, daily crushing from 60 to 70 tons of ore.

(From Our Special Correspondent.)

Kennedy.—This company has decided to sink a new vertical 3-compartment shaft about ½ mile east of the present works, and expects to intersect the vein at the 3,500-ft. level. The necessary machinery has been contracted for and a large amount of timber is already on the ground. This property is near Jackson, and is operated under the superintendency of J. F. Parks.

Keystone.—A full force of miners are employed at this mine, in Amador City. The water supply is still short, and the mill does not run on full time. The grade of ore has improved very much of late. N. Carmichael is superintendent.

Medean.—The lease on this mine, ½ mile south of Amador City, adjoining the South Spring Hill Mine, has been extended until next May, and work is going on as usual. The ore being sent up is milled at the South Spring Hill Mill.

Sutter & Amador Water Company.—This company has just completed a new reservoir on the ditch on the north side of Median Hill. New pipes have also been laid in South Amador.

Calaveras County.

(From Our Special Correspondent.)

Gwin.—At this mine, 4 miles southwest of Mokelumne Hill, drifts are being run south on the 1,000, 1,200 and 1,400 ft. levels, working from the north shaft. Enough good ore is being taken out to keep the 40-stamp mill running day and night. The pump and the air compressor plant have been removed to the north shaft, through which all work is now done. The hoist is operated by steam and the mill by water power. F. F. Thomas is superintendent.

Washington.—This mine, together with the Bonanza, New Discovery and Wonder mines, all located in the Washington Ranch District, 4 miles east of San Andreas, on Sheep Ranch Road, have been bonded by M. C. Hawes, of San Francisco, for 60 days. There are several ledges which average 4 ft. in width, assaying from $20 to $35 per ton. Development work has reached a depth of from 40 to 65 ft.

Kern County.

(From Our Special Correspondent.)

Red Dog Mill.—This mill is now running on ore from the Butte and Wedge mines, and has ore enough engaged to keep it running day and night for some time.

Yellow Aster.—At this mine, near Randsburg, in excavating for the retaining walls of the 30-stamp mill, the 15 ft. vein of the Olympus claim was encountered. Previous to this three veins were struck in crosscutting from the Rand tunnel to the Trilby ledge. A shaft is to be sunk at the mill, and a 30 H. P. hoist put in. The electric plant at the mill will also furnish light for the mines.

Nevada County.

Empire.—This mine, near Grass Valley, now has its steam plant in operation.

Placer County.

Pioneer Mining Company.—The report for October is: Rock crushed, 900 tons; value bullion, $8,425; average value of rock, $9.36; total expenses, $2,525; net earnings, $2,900. The average value of the rock is the lowest since the company began publishing monthly statements, in June, 1897.

(From Our Special Correspondent.)

Blue Cañon Mining and Development Company.—The main tunnel in the drift mine, owned by this company, is in 1,150 ft., the work being done by five men with machine drills. The water supply has been very short. The property owned by the company comprises 1 mile along the main lava divide, between the North Fork of the American and the Bear rivers.

Eureka.—The buildings containing the 80 H. P. boiler, air compressor and other machinery at the mouth of this mine, 3 miles north of Sunny South, have been destroyed by fire, and several lives would have been lost if the superintendent, Felix Chappalet, Jr., had not rushed into the tunnel at the risk of his life, and warned the men who were working ½ mile distant. The buildings collapsed a moment after the miners dashed through the falling embers into the open air.

Golden West.—The tunnel at this mine, on the North Fork of the American River, near Blue Cañon, is in 700 ft. A new tunnel is to be started 200 ft. lower down, at a point on the river 32 ft. above high water mark.

Herman.—The mill at this mine, 6 miles north of Deadwood, is running day and night on good milling ore, taken from the face of the ledge in the shaft. The ledge is over 10 ft. in width. About 35 men are employed.

San Bernardino County.

(From Our Special Correspondent.)

Cajon Pass.—A coal vein has been discovered about ½ mile south of Cajon Station. The vein is said to be 9 ft. in width at a depth of 6 ft. This is the second discovery of coal in this vicinity.

California Borax Company.—Large shipments of lumber and machinery are being received at the new plant of this company, which is located near the old Searles works. The management expects to turn out refined borax early in the spring.

San Diego County.

(From Our Special Correspondent.)

Stonewall.—At this mine, on the Cuyamaca Grant, 10 miles south of Julian, a large cyanide plant is in course of erection, the tank house being 160 by 60 ft. The tailings from the mill, amounting to about 200,000 tons, have been purchased by Shinn & Strauss, of San Francisco, who expect to have the plant in full operation, employing between 30 and 40 men, in a few weeks. A tramway is to be erected, running through the body of tailings, which cover 5 acres, and cars will be run to the tanks. Between 100 and 200 tons per day will be treated, from which they expect to realize from $2 to $7

per ton. A large amount of low grade ore on the dump will also be worked.

Shasta County.

(From Our Special Correspondent.)

National.—The mill at this mine, near Copley, has started up. The power is obtained from the Paul & Garlick Electric Plant, which now has plenty of water, and is in a position to furnish all the power needed by its old patrons.

Sierra County,

(From Our Special Correspondent.)

Oriental Gold Mining Company.—This company has been incorporated with a capital of $30,000. F. Godfrey, F. B. Hill, M. W. Mather, H. L. Johnson and W. J. Landers, directors. The company is developing the Plumbago Mine, on the Middle Yuba River, above Moore's Flat. The property is said to be yielding $25,000 per week.

Siskiyou County.

(From Our Special Correspondent.)

Commodore.—About 20 men are employed at this mine, at the head of Barkhouse Creek, about 13 miles northeast of Scott's Bar. The 6-stamp mill is running steadily on good ore.

Red Hills.—This hydraulic mine, situated at the mouth of Knownothing Creek, which empties into the South Fork of the Salmon River, is said to have been sold for $20,000 to San Francisco parties.

Tuolumne County.

(From Our Special Correspondent.)

Densmore.—At this mine, near Columbia, about 40 men are at work, most of them on underground development. The 4-stamp triple discharge mill (1,000 lb. stamps), now in course of erection, will, it is said, equal an ordinary 10-stamp mill. There is a large amount of ore on the dump, enough to keep the mill running for a long time. Arrangements are being made to secure water from the Tuolumne County Water Company's ditch, near Slum Dam. A contract for 3,000 ft. of pipe has been closed.

COLORADO.

Boulder County.

Amalgam Mining and Milling Company.—The company's mill at Sugar Loaf is running on ores from the Amalgam, Thief and Livingston mines. The mill is under the management of John Rothwell.

Northern Coal Company.—This company, operating lignite mines at Louisville and Lafayette, is discarding wooden mine cars and introducing steel cars made by the Vulcan Iron Works, of Denver. It has placed a contract for 150 cars, to weigh 1,300 lbs. each.

Ogalallah.—E. B. Travillion has taken a lease and bond on this mine, near Boulder.

San Blas.—Work on the mine and mill near Ward. George E. Brinker has been appointed superintendent.

Clear Creek County.

(From Our Special Correspondent.)

Crown Point-Virginia.—This property at Idaho Springs shows smelting ore in both sides of the shaft at 710 ft. An option is understood to be out on the property. Messrs. Bush, of Cripple Creek, and Wilson, of San Juan, have just completed an examination for an English pool.

Joe Reynolds.—This property at Lawson, owned by Jay Morton, of Chicago, has a new shaft down to a depth of 800 ft., and levels are being driven on both sides along the vein. On the west a showing never before encountered in the mine has been made of silver ore. Two classes are coming out, both being shipped to the smelters. The first class runs net $50 per ton and the second class nets $20 per ton. The main ore body, however, is on the east side, and this runs on an average of over $100 net per ton. The level from the bottom of the shaft is just coming into the streak.

Stanley.—In sinking the shaft on this property at Idaho Springs a duplicate Worthington pump was added to handle the water below the 600-ft. station. The new pump will handle the water below this station, pumping it for rehandling by the older pump from that to the surface. Very rapid progress is making in the sinking of the shaft. It is double compartment, and over 100 ft. per month is being made.

El Paso County—Cripple Creek.

(From Our Special Correspondent.)

Lafayette.—Quite a good find of ore is reported on this property, situated near the Lucky Guss on Bull Hill. The property was recently purchased by a number of Eastern ladies, who have put it into a company known as the Princess Alice Company.

Little Pearl.—S. L. Van Amringen, of Cripple Creek, has been given an option on this property. The property is on Bull Hill, not far from the Hull City Placer. At present the claim is worked by lessees, who are getting out some good ore. It is owned by Jack Ryan and others.

Montreal Gold Mining Company.—This company, which owns the Fluorine Mine, on Copper Mountain, has entered the list of dividend payers, having come out with one of $7.50 per thousand shares. The Fluorine has been worked under lease by J. A. McClurg, of Denver.

Standard Tunnel.—A contract for an additional 600 ft. of work on this tunnel has been let to Harris & Hollin by J. Wallace, of New York, one of the principal owners. The tunnel is already in about 2,300 ft. It enters Beacon Hill on the Gold Run side, and is running toward the Elkton Mine on Raven Hill.

Victor Gold Mining Company.—This property has again come to the front and declared a quarterly dividend of $100,000. This is the third one of this amount that has been declared this year, as well as one of $30,000, making a total of $330,000 declared since January 1st. The last dividend is to be paid December 1st. The Victor Mine has paid a larger amount of money, compared to its capitalization, than any other mine in the district, having declared $1,155,000 in dividends, or $155,000 over its capitalization. Work is progressing as usual and a large amount of ore is being shipped. N. H. Cone has charge of the mine.

Vindicator Consolidated Gold Mining Company.—The increase in the production for the first eight months of 1898, over the year of 1897, is considerable, and is shown by the following figures: Gross production of Shaft No. 1, for 1897, $191,554; cost of freight and treatment charges, $79,071; net production, $112,483. Gross production for the first eight months of 1898: Shaft No. 1, $287,343; Shaft No. 2, $12,820; Shaft No. 3, $12,167; Shaft No. 4, $4,453; Shaft No. 5, $17,083; Shaft No. 6, $3,659; Shaft No. 7, $17,632. Total gross production, $355,049. Treatment and freight, $107,100. Net, $247,949. The property adjoins the Lillie and the Hull City Placer, and consists of seven claims and parts of claims. The officers of the company are mostly Denver men. The stock of the company has recently been listed on the Colorado Springs Stock Exchange. F. J. Campbell is in charge.

Gilpin County.

(From Our Special Correspondent.)

The big mines are keeping up and in some cases increasing their usual production. There is a healthy activity manifested in the old sections of the county, around Central City, Black Hawk, Nevadaville and Russell Gulch.

Bobtail No. 5.—Leasers are taking out smelting ore through the Bobtail tunnel which runs over 7 oz. gold per ton.

Brooklyn Gold Mining Company.—This is a new corporation formed to work the Brooklyn, and it is reported it will begin work December 1st.

Cook.—A Norwalk air compressor of 5 drills capacity has been installed, and the management is thinking of putting in another one at an early date. The company is also considering the advisability of making connections with the lines of the Gilpin Tramway Company. C. K. Colvin is manager.

Del Norte.—Local parties have taken a lease on this property, in Enterprise District, which is owned by J. W. Barker, of Denver.

Gregory Consolidated Mines Company.—A large Knowles duplex pump with a capacity of 700 gals. has been put in the 4th level of the Briggs shaft, below the 900-ft. level of the Gregory incline. The big incline is being extended to cut the Briggs shaft, so that ore hoisting will only be necessary. Men are sinking and upraising to the Bobtail vein. A daily force of over 75 men is maintained, and good shipments continue. A. L. Collins is manager.

High Grade.—A contract has been let for a shaft house and a plant of machinery at once. Pierce, Hughes & Company, of New York, and Denver parties are behind the operations.

Pierce.—In this mine, owned by Senator Henry M. Teller and Hal Sayr, of Denver, the recent strike has turned out bigger than expected. In the 200 ft. drifts each miner is breaking down 10 tons of ore per day which carries values of about 3 oz. gold per cord. The smelting dirt goes from 2½ to 6 oz. gold per ton. Steve Hoskins is manager.

Puzzle.—An injunction was served by the lessees of this property on the operators of the Pederson, an adjoining mine, claiming that the latter were extracting ore from Puzzle ground. No attention was paid to the injunction, and the case went to court. It is believed the Pederson people will make a suitable offer, which may be accepted.

Susan Mary.—A 25 H. P. plant of machinery is being put up on this property, which is worked by Scholl & Company under lease. A good strike was made recently.

Gunnison County.

According to a Denver paper, operators in Gunnison County say that the past was the best season for gold mining in the history of the county. The largest amount of development was at the Granite Mountain Mine, and the greatest results in dollars and cents were on the Maid of Athens and adjoining claims.

Ouray County.

(From Our Special Correspondent.)

Cleopatra Mining and Milling Company.—On November 19th the company made an assignment to C. W. Haskins and George R. Hurlburt, of Ouray. The debts aggregate $16,000, the greater portion of which is due the two Ouray banks. It was generally thought the pyritic smelter was more than making expenses, and the failures came as an unpleasant surprise. President-Manager H. W. Fowler states that one cause of the failure was high railroad freights, but it is evident that there is not an adequate supply of sulphide ore hereabouts. The plant has distributed a good deal of money and given employment to a number of men, and the shutdown now is unfortunate.

Lake County.

(From Our Special Correspondent.)

Alps Consolidation.—The lessees are arranging to explore with a diamond drill. Rich lead shipment were made some time ago, giving indications of a strong shoot. However, the lessees could only locate pockets, hence a series of drill holes are to be sent down.

Banker Mining Company.—Manager John Guth has his machinery on the ground on Breece Hill, in order to resume sinking.

Butcher Boy Group.—Capt. Yankee, of Sedalia fame; Terry Connors, and others, have secured a lease on the Butcher Boy and several other properties located on the Iowa Gulch slope of Alps Mountain. These lessees are also figuring for a number of other claims adjoining. They expect to begin at an early day, through the Butcher Boy claim, although it is very likely that an entirely new shaft will be sunk.

Dollie B.—Manager P. K. Connolly has just completed two fine boarding houses, lighted with electricity and fitted with steam and all modern conveniences. At the mine, the new boiler, the largest in the camp, is being put in, which will help in handling the water. All of the new ore bins, etc., are completed. Much of the lower grade ore will now be shipped, in addition to about 50 tons daily of good gold ore.

Fanny Rawlings.—Manager Walsh is pushing development work on the ore body opened up some weeks ago, and is shipping about 50 tons per day.

Garbutt.—On this property, lying above the Ibex, in Idaho Park, lessees are working an ore body of fair size, from which they are shipping about 200 tons a month.

Lake Park Section.—Considerable prospecting and development is still going on. The Hap-Hazard people have built sheds, etc., and are prepared to continue work throughout the winter. They are making occasional shipments of fine gold ore. Operations are being pushed on the Nanticoke with excellent results.

Little Bob Mining Company.—Sinking is resumed. It is expected to put the shaft down about 50 ft. through porphyry, where a drift will be run.

Reindeer Mining Company.—The company has extensive acreage in South Evans Gulch, embracing some 23 well located claims. The water has been taken out of the Howard shaft, a station cut at the 620-ft. level and drifting begun. The management encountered small bunches of ore running very high in gold, silver, lead, copper and iron at the 350-ft. level, but could not find the main body.

Rialto Leasing and Mining Company.—The management states that they are pushing their drift into the mineralized territory, and that the results are growing better daily, though not enough work has been done to determine the extent of the ore body.

San Miguel County.

(From Our Special Correspondent.)

Anglo-Continental Gold Syndicate, Limited.—This company, which one year ago agreed to purchase the Terrible & Butterfly group of mines, near Ophir station, for a consideration of $190,000, and made a cash payment of $25,000, defaulted a payment which recently became due, and the property has reverted to Knute Benson, the original owner. While it had possession the company built a 30-stamp mill, erected a wire rope tramway, and constructed substantial boarding and bunk houses. All these are now in the hands of Mr. Benson, who has put 50 men to work in the mine, and will soon have it in shape for regular production. He will start 10 stamps of the mill, and will increase the number until the entire 30 are dropping. The Terrible & Butterfly vein is 3 to 8 ft. wide, of low-grade gold and silver ore, although a portion is high grade enough to ship.

Japan Mines Company.—In consequence of an unusually dry summer and fall, the Japan mill closed a few days ago. During the summer the plant turned out from one and one half to two carloads of concentrates daily, which averaged $100 per ton in gold, silver and lead. In addition several carloads of crude ore were shipped weekly to smelters, which netted from $700 to $1,000 per car. Development work will be carried on all winter.

Liberty Bell Gold Mining Company.—The new mill, which has been in course of erection for several months, will be in operation very soon. It has only 10 stamps, but if results are satisfactory, it is understood the number will be increased to 80. The 2-mile wire rope tramway, connecting the mill with the Liberty Bell group, is rigged for 100 tons in 10 hours, and works well. The vein is from 2 to 8 ft. wide, carrying medium values in gold and silver. J. W. Mercer, of Telluride, is resident manager.

Marshall Basin Mines Company.—This company has got possession of the Little Mary, in Marshall Basin, and has a force of men developing. The pay stream is from 1 to 3 ft. wide, and runs, according to mill tests, from $40 to $60 in gold per ton. Machinery for a 10-stamp mill was recently purchased. The mill will be set up as soon as possible. The Little Mary crosses the Sheridan at right angles, and at the intersection of the two veins some exceedingly rich mineral has been taken out. B. H. Locke, of Telluride, is resident manager.

San Juan Gold Mining Company.—This company's new mill, in Gold King Basin, started work for the first time about two weeks ago, but is now temporarily idle for some changes. The ore is pulverized by rolls. The mill has a capacity of 100 to 150 tons in 24 hours, and can be increased by 300. It will be supplied with ore from the Bessie group. Most of the veins carry gold exclusively. Senator W. S. Buckley, of Telluride, is Western manager.

Tom Boy Gold Mines Company.—The Tom Boy mill is said to be turning out $125,000 in gold every month. It is treating from 175 to 250 tons of mineral every 24 hours. The company has a pumping station at Ptarmigan Lake, about 12,000 ft. distant, which supplies the mill with water. The mine is reported to be looking well, the vein being from 8 to 15 ft. wide, of free milling quartz. The mine and mill are employing about 150 men.

IDAHO.

Idaho County.

Iola.—This company, at Warren, is running a 10-stamp mill. Good returns are reported.

Latah County.

American Placer Mining Company.—This company, which owns the property on the famous Oro Fino Creek, near Kendrick, has just completed a ditch and flume. The company is putting in three giants and running now with 16 men employed.

Democrat.—On this Kendrick property the tunnel is in 900 ft. A 10-stamp mill is to be put in. J. Dunn is manager.

Eureka Pacific.—This Spokane company, of which G. B. Dennis is president, is operating on Beeds Creek, having several hundred acres of placer ground. The property is being developed, 16 men being employed.

Mascot Mining and Milling Company.—This company, working the Blanket ledge, in Gold Creek, near Kendrick, is putting up a new stamp mill. About 16 men are employed.

Lemhi County.

Lone Star.—A strike of gold ore in this mine, near Salmon City, owned by the Bell Mining Company, of Denver, Colo., is reported. The fissure is 2 ft. wide, with a pay streak 4 to 8 in. thick.

Owyhee County.

De Lamar Mining Company.—The cabled return for October states that 5,082 tons of ore were leached during the month, producing $37,495 worth of bullion. The total produce was $45,510; total expenses, $33,560; profit, $11,950.

Shoshone County.

Klondike Milling Company.—According to report, there is a showing of 4 ft. of carbonate ore in the tunnel on the company's property, near Wardner. The stockholders are mostly Wardner men.

(From Our Special Correspondent.)

Helena-Frisco.—During October 15,790 tons were mined and milled, affording a profit of $25,000 for the month. The cross cut to 1,600 level is now being run. The new Riedler pump is installed and is giving entire satisfaction.

MICHIGAN.

Copper.

Isle Royale.—Both shafts are now well down toward the 10 level.

Michigan.—The hoisting engines for the two shafts are on the ground, and the compresser is ready for service. New boilers are being installed. Shaft sinking is well begun.

Mohawk.—The company has prospected its ground thoroughly. It lies immediately north of the Osceola.

Tamarack Mining Company.—This company has declared a dividend of $4 per share, payable December 28th, to stockholders of record on November 30th. This makes $8 for the year, against $6 in 1897. This dividend will require $240,000, making the total amount paid in dividends to date $5,570,000.

Wolverine.—The company is reported on good authority to be earning now about $17,000 a month.

Iron—Marquette Range.

Primrose.—The Home Iron Mining and Manufacturing Company, of Cleveland, has granted an extension of the lease on this mine, near Negaunee, to the heirs of Thomas Joyce. The lease calls for a 5c. a ton royalty on the present basis, with arrangement for an increase if the price of ore advances. There is also a further agreement for an extension after 20 years.

Bay County.

Monitor Coal Company.—This company, at Colfax, is shipping 300 tons of coal daily, beating the record for Bay County.

MINNESOTA.

(From Our Special Correspondent.)

Almost no ore is now moving, and most of the ore fleet is in the grain trade, six of the great Bessemer ships are on the way to Duluth for wheat, and are expected to load out not less than 1,300,000 bu. There were about 50,000 tons of ore in the docks of this company early last week, but much of this has gone forward. There will be no ore left on these docks this winter, and none in cars. The Duluth & Iron Range road shipped 13 cargoes last week, and will continue at work till December or later, unless ore freezes in docks too much. Three mines are still shipping over that road.

The trial of J. H. Southall, of St. Paul, clerk in the United States Engineer's office, on a charge of forging and raising time checks to the amount of several hundred thousand dollars, has closed, and Southall has been found guilty. He was for a long time chief owner of the Southall Mine on the Vermilion Range, and considerable of the money stolen was sunk in the development of the mine.

The case of the State of Minnesota against the Duluth & Iron Range road, for the forfeiture of the land grant of the latter, is still on trial. The plaintiff is not making out a case.

Contractors are figuring on very heavy improvements for the ore roads for construction this winter. No contracts have been given out as yet, but may be soon.

At the coming session of the State Legislature it is expected that some changes will be attempted in the rates on iron ore haul to the lake, and in the royalty on State lands. Probably nothing will be done, as the former matter is in the hands of the State Railroad Commission. There is a constant call for men from the iron mining regions for the copper country of Michigan.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Fayal Iron Company.—At this mine, the stripping contractor, the Drake Stratton Company, has already uncovered a large amount of ore, and is pushing operations vigorously. The mine will ship to December 1st.

Minnesota Iron Company.—This company's Genoa and Auburn mines are still shipping, and will continue for a week or more. They will be the last mines on the range to run.

Roberts Iron Company.—This company expects to open its mine in township 58-16 in a few weeks and ship considerable ore next year, which it must stockpile this winter. It has been idle for more than a year. Some 20,000 tons of Roberts ore were sold some time ago. It is a high silicon ore.

Sparta Iron Company.—This mine is closed down tight, and no stripping will be done this winter. Its shipments were 236,000 tons for the season.

Iron—Vermilion Range.

(From Our Special Correspondent.)

Minnesota Iron Company.—This Company is doing considerable exploring about Soudan and Tower, having no less than five diamond drills steadily at work. The mines have about complete shipments for the season. The force employed during the winter will be slightly larger than last year, and the amount stockpiled will be ahead of any preceding season. There has been some slight disappointment the past year with the grade of ore taken out, but this may not be permanent.

MISSOURI.

Jasper County.

(From Our Special Correspondent.)

Joplin Ore Market.—The past week has been the greatest in the history of this mining district, and all records were broken. The product of the Eagle Mine at Belleville sold for $36.50 per ton, a price never before reached in the district. Buyer Huntly of the Empire Zinc Company offered $36 per ton on Monday, and the offer was taken under consideration. On Tuesday top grade zinc ore sold at $35.50, and, with the exception of two carloads, the entire product of the camp sold at that price. On Wednesday the Matthiessen & Hegeler agency bought the Eagle Company's ore at $36.50 and the output of the Big Eight Mine sold at $36 per ton, as well as two or three others at Joplin. Low grade ores advanced even more sharply than the high grades. Lead ore remained unchanged throughout the week at $21 per 1,000 lbs. There is no surplus zinc ore in the entire district, although there is a large amount of lead ore held for higher prices. During the corresponding week of last year zinc ore sold at $24 per ton for top grade and lead ore brought $22.50 per 1,000 lbs. The output of zinc ore was less than for the week just closed by 2,982,420 lbs., but the output of lead ore was greater by 364,010 lbs.; the value was less by $85,872. For the corresponding 47 weeks of last year the shipments of zinc ore were less than for the same period this year by 84,541,650 lbs., but the lead ore shipments were greater by 5,918,130 lbs., but the value was less by $2,005,721. As compared with the previous week, the zinc ore sales show an increase of 850,370 lbs., but the lead ore sales fell off to the extent of 75,460 lbs. The value was greater by $23,972. Following are the sales of lead and zinc ores from the different camps in the district for the week ending November 19th: Joplin, zinc, 1,617,120 lbs.; lead, 294,010 lbs; value, $34,474. Carterville, zinc, 1,142,570 lbs.; lead, 166,560 lbs.; value, $21,494. Webb City, zinc, 804,920 lbs.; lead, 41,820 lbs.; value, $13,556. Oronogo, zinc, 771,400 lbs.; lead, 40,460 lbs.; value, $13,776. Central City, zinc, 421,430 lbs.; lead, 10,490 lbs.; value, $7,495. Stotts City, zinc, 228,100 lbs.; value, $3,992. Duenweg, zinc, 754,760 lbs.; lead, 19,520 lbs.; value, $12,486. Galena, zinc, 3,328,570 lbs.; lead, 253,510 lbs.; value, $59,580. Aurora, zinc, 1,445,000 lbs.; lead, 30,000 lbs.; value, $20,044. Hell's Neck, zinc, 119,880 lbs.; lead, 2,730 lbs.; value, $2,155. Belleville, zinc, 106,830 lbs.; lead, 5,000 lbs.; value, $1,970. Springfield, zinc, 87,500 lbs.; value, $1,315. Wentworth, zinc, 43,500 lbs.; value, $763. Alba, zinc, 43,340 lbs.; value, $724. Carthage, zinc, 116,000 lbs.; value, $2,001. District totals for the past week, zinc, 11,025,970 lbs.; lead, 804,090 lbs.; value, $195.733. District totals for 47 weeks, zinc, $398,738,830 lbs.; lead, 47,307,570 lbs.; value, $6,054,637.

Empire Zinc Smelting and Mining Company.—Last week the company shipped four cars of high grade spelter to Europe by the way of Port Arthur. They own 900 acres of rich mining land adjoining the city limits of Joplin, and the past week their land produced over 95 tons of high grade zinc ore. There are quite a number of prospect shafts going down on the land, with 30 producing shafts.

Jacksonville Mining Company.—This company on the Harper land, west of the John Jackson lease, has a shaft down 96 ft., and had good lead ore from 63 to 75 ft. The directors of the company are B. F. Bond and J. W. Dolly of Jacksonville, Ill.; John Falk of Litchfield, J. D. Dougherty of Joplin and George W. Dye, secretary and treasurer, of Jacksonville, Ill.

Pleasant Valley Mining Company.—The company has opened up a large body of zinc ore in shooting ground, and the past week took out chunks of zinc ore that weighed over 500 lbs. each.

Spring City Mining Company.—The La Salle and Bolen plants have rearranged their pumps. The La Salle Company has added a 14-in. crusher to their concentrating plant. They only ran one day the past week, and made 6½ tons of zinc ore in nine hours, which was sold at $35 per ton. All repairs are completed, and a large output of ore is expected this week. McAdams & Company has made a first turn-in of 1,110 lbs. of lead ore.

MONTANA.

Lewis & Clarke County.

Montana Mining Company.—The cabled return for October states that the total output was: Gold, 3,960 oz., and silver, 21,910 oz., obtained from 6,600 tons of ore crushed in the mills, and 12,371 tons of tailings from the dams brought under treatment. The estimated realizable value of the produce of crushings is $48,000; tailings, $44,100. Total, $92,100. Treatment of 12,371 tons of tailings, $18,270; redemption of cost of tailings plant, $4,330. Total expenses, $61,800; estimated net profit, $30,300.

Madison County.

Clipper.—This property, owned by Elling & Morris, employs about 30 men. The tailings of the mill are treated with cyanide.

Garnet Gold Mining Company.—This company has been working the Galena Mine, near Perry, with a force of 30 men, all Summer. The mill has shut down, as it is run by water power. The ore is concentrated, from 10 to 15 into one. In the process two-thirds of the gold is saved on the plates. An average of three carloads of concentrates a month has been shipped to the smelter. A gasoline engine, to run the machinery this Winter, is contemplated. C. H. Woods is manager.

Silver Bow County.

Butte & Boston.—The company has filed a bill of exceptions to the recent decision in its suit against the Montana Ore Purchasing Company for damages from slag dumped upon its land.

(From Our Special Correspondent.)

Anaconda.—The Diamond shaft is still being sunk. At present it is a little below the 1,700-ft. mark, and work will be continued without cessa-

tion to the 2,000-ft. The shaft has three compartments, and is said to be one of the best in Butte. The copper ledge was cut at the 1,625, the ore running well in copper, with some gold.

The Green Mountain is the deepest vertical shaft in Montana. It is down 2,100 ft. During the past year it has been sunk close on to 500 ft. There are more men working on copper properties in Butte to-day than ever before in its history. In and around Butte there are about 6,800 men employed.

Boston & Montana.—Sinking is being pushed at the Berkely shaft.

The Mountain View has laid off its working force for a few days, to repair the shaft. A good ledge has been struck on the 700-ft. level.

Colorado.—The company is sinking a double compartment shaft on the Otisco Mine, which it has secured under lease.

Butte & Boston.—The company has filed an answer in the United States court to F. Aug. Heinze's complaint, in which it is claimed the Butte & Boston formed a conspiracy for obtaining valuable mining claims from "Doc" Larkin, while he was of unsound mind. The Butte & Boston Company denies the allegation, and in return alleges that the Heinzes and their attorney have entered into a conspiracy to defraud the Butte & Boston, by making it appear that Larkin was insane at the time he conveyed his interests in the Snohomish and Tramway claims to them.

At the East Gray Rock, the shaft has been sunk to the 1,600-ft. mark, the last set of timbers being now in. A station will be cut, and sinking resumed. Some good ore is being extracted from the 1,500-ft. level.

Lexington.—The company is now letting a few leases, some of which are reported to be making fair returns. The company, since the slump in silver, has done little, and this is about the first active step taken in underground work.

Original.—At this mine, property of W. A. Clark, the usual amount of ore is being extracted, while the drifts, stopes, etc., are making an excellent showing. At the Stewart, also Clark's property, the erection of a large shaft house has begun.

NEW MEXICO.

Santa Fe County.

Monte Cristo Mining Company.—A dredge of large capacity has been put on this company's placer ground, near San Pedro. It has a patent contrivance for saving fine gold. The water to operate the washer is to be pumped into a reservoir 150 ft. above the machinery, but before the machinery is run regularly an additional water supply must be secured. A force of about 15 men will be necessary when the plant is worked to its full capacity.

Socorro County.

Tower Peak.—This company, near Socorro, has secured a number of mining claims in the Madalena Mountains, and has constructed a wagon road from its Water Cañon claim to the new claims. A concentrating plant is to be put in.

OHIO.

Perry County.

(From Our Special Correspondent.)

Sunday Creek Coal Company.—The company has opened up mine No. 8 at Corning, which has been closed for the past two months, and is drawing top coal and pillars, loading about 10 cars a day.

OREGON.

Baker County.

(From Our Special Correspondent.)

Bonanza.—The mill has closed down temporarily for repairs to plant.

Burnt River Gold Mining and Milling Company.—This company, capital $1,000,000, John P. Hanna, Cincinnati, president; Col. James A. Panting, Vice President and General Manager, Forest, of Dean, England; H. P. Wiborg, treasurer, Cincinnati; W. T. Hanna, Secretary, Cincinnati, has property 30 miles east of Baker City, in the Gold Hill Range of the Blue Mountains. The main tunnel, which is 1,000 ft. long, shows high grade, free milling ore. The company owns 18 quartz and four placer claims. About 2,000 ft. of drifts and crosscuts have been driven on four of the claims, all of which have veins running parallel with main ledge, or what is known as Spring Gulch Lode. An extra force of men has been put to work. The vein is on the same ledge as the Canyon Creek Mine, which produced $6,000,000, and the ore is the same, with granite hanging and slate foot wall. There is a 10-stamp mill on the property.

PENNSYLVANIA.

Bituminous Coal.

(From Our Special Correspondent.)

Connellsville Coal.—The recent abandonment of the coal mine at the West Overton coke plant shows that the bed of Connellsville coking coal will not last forever. What will take its place remains to be discovered. The West Overton Mine had been working since 1874, the 200 acres of coal having supplied the 110 bee-hive ovens ever since, but with many shut-downs from strikes and dull business. Morrell plant, with 400 ovens, is rapidly nearing its end. The coal there is in many instances bound to be lost before mined, because of squeezes in the workings shutting off partially worked out sections of the pit. Uniondale is another mine nearing its end, while in this same class may be placed Jackson, Tyrone, Pennsville, and others. Many of the plants along the Mount Pleasant branch of the Baltimore & Ohio, the portion of the Connellsville region first developed, will not last at the present rate of activity more than from 5 to 10 years. The life of the whole region may be placed at 50 years.

Connellsville Coke.—W. J. Rainey's new crusher, at Mount Braddock coke plant, is nearing completion. It is the fourth in the region. One is located at the Standard plant of the H. C. Frick Coke Company, and a second at the same company's Redstone plant. The third is at the Laughead plant of the Martin Coke Company, near Fairchance. The H. C. Frick Coke Company built a fourth at Valley, and the plant stood, though not operated, until torn down a few months ago. The increased demand for crushed coke for domestic purposes in many of the larger cities, including New York, where several new orders have been obtained, induces Rainey to erect the new crusher.

Sherrick Run Railroad.—Reports are current again that this railroad will be built. The road is a proposed extension of the Youghiogheny Northern, the branch that goes up the valley from Broad Ford to Summit, and connects at Broad Ford with the Pittsburg, McKeesport & Youghiogheny. The new extension, if built, would connect with the Beech Creek in Clearfield County.

Slate.

(From Our Special Correspondent.)

Foreign Orders.—The past week has seen an increase in foreign orders among Bangor exporters. George K. Snook reports orders received for 100 carloads of roofing slate. Fifty carloads will leave Philadelphia on January 1st, 1899, for Cardiff, Wales, and 50 carloads are destined for London, Newcastle and other points. Mr. Snook expects increased business next year, having already contracted for freight room considerably in excess of his '98 business.

Excelsior Slate Company.—The property of this company, located near Danielsville, was recently seized by the Sheriff, but a settlement has been effected with the creditors, and operations resumed.

Hoboken Quarry.—The water has been pumped out and top is being taken off. Slate making will soon begin.

Imperial Slate Company.—Labor troubles at this quarry have been adjusted, and the men have returned to work.

Masters' Sons.—A block was hoisted recently from which over seven squares of roofing slate were made. Blocks of that size are rare.

New Wales Hard Vein Slate Company.—The quarry recently operated by this company will be offered at public sale on December 3d. The property consists of 73 acres.

Old Bangor Slate Company.—An official of this company states that it has been decided not to resume work until next Spring.

Slate Prospecting.—Wm. Blake, of Bangor, has a force of men engaged in prospecting for slate south of the Penn Argyl Valley quarry.

Slate Shipments.—During October the Bangor & Portland Railway hauled 584 cars of roofing slate and 26 cars of school slate, a total of 610 cars. Shipments for the corresponding month of last year were 682 cars.

Quarry Slide.—Several thousand tons of rock and earth fell into the quarry of Edward Harding, at Danielsville, recently, covering the bottom 20 ft. deep. It will require three or four weeks' work to clear away the debris.

UTAH.

(From Our Special Correspondent.)

Bullion and Ore Shipments.—During the week ending November 19th the bullion and smelter products forwarded east from the different smelters and camps of the State were: 20 cars or 713,850 lbs. lead-silver bullion; 3 cars or 124,918 lbs. copper bullion; 47 cars or 1,960,425 lbs. lead-silver ore.

Cyanide Products.—The week of November 19th made a new record for receipts of cyanides at the Salt Lake City quarters of the Consolidated Kansas City Smelting and Refining Company, consignments aggregating 7,000 lbs., and the gold contents probably averaging an ounce to the pound, or better. Of this handsome total the De La Mar Mercur mill contributed nearly 1,000 lbs. Cyaniding plants of the inter-mountain region, which confine their operations to the open season, are closed down for the winter.

Ore Supply.—November is proving the most active month of the year in mining affairs. Some attribute this to the lively mining share market, but the cause is further back, for the surprising strength of local mining shares is primarily due to good discoveries in the mines. The prospect of the winter ore tonnage holding up is bright.

Highland Boy Smelter.—Mr. Newhouse informed the writer to-day that he has instructed the metallurgic engineers to get up plans for a lead smelting addition capable of treating 300 tons of ore daily, and that the construction will be complete when the remainder of the plant goes into commission, probably in May, 1899. The works are admirably situated in Salt Lake Valley, 10 miles south of Salt Lake City, close to the Jordan River, and a mile southwest of the Germania, with an ample dump ground on the lower bottom land—50 ft. below the bench on which the smelter is being built. The work of construction progresses smoothly and rapidly. There will never be a period when mine owners have not a grievance against smelters, and Utah mine owners aver that they are less fairly treated than their brethren of Montana and Colorado, and, naturally, this independent new smeltery, with substantial backing, is looked upon as a want long felt.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—For the week ending November 19th the shipments from the rail points of the district were 63 cars of ore, 9 cars of concentrates, and 30 bars of bullion. Grand Central is well in the lead, sending out 18 cars ore, Bullion Beck 10 cars, Gemini 9 cars, Swansea 6 cars, Centennial Eureka 4 cars, Four Aces 1 car, Ruby Wedge 1 car, and Dragon Iron 14 cars hematite for flux. Eureka Hill forwarded 5 cars of concentrates and 26 bars of bullion; Mammoth 4 cars of concentrates and 4 bars of bullion.

Star Consolidated.—In drift from 400 level a 3-ft. ore face gives reported returns of 10 to 32% copper, 40 oz. silver and $2 gold per ton. There are 3 carloads of lead ore awaiting shipment.

Piute County.

(From Our Special Correspondent.)

Holland Gold Mining Company.—Articles of incorporation were filed with the Secretary of State on November 11th. Principal office, Salt Lake City; annual meeting, second Monday in November. Capitalization, $37,500; shares, 25c. Officers and directors are: Frank J. Cannon of Ogden, president; W. F. Snyder of Richfield, vice-president; Angus J. Cannon, secretary-treasurer; W. E. Hubbard, Hugh J. Cannon, the last three of Salt Lake City. The realty consists of Holland, Placer Gulch, Gold City and Dande Quille lode claims, in the Gold Mountain mining district.

Salt Lake County.

(From Our Special Correspondent.)

Bingham Placers.—Large owners in Dalton & Lark, it is said, are organizing a placer company, and there are others actively moving in the same direction. Although considerable capital is required to reach and recover the gravel on bed rock, it pays.

Commercial.—It is hinted that a pyritic copper ore body is opened, and that the mine will be energetically worked. Messrs. William Bagley, O. P. Posey and others visited the property a few days ago.

Highland Boy.—In driving the drift on No. 4 tunnel, in over 1,700 ft., the face, 800 ft. vertically below surface, strong copper ore seams, carrying the best gold and silver values found in the mine, were recently cut. E. P. Jennings has been appointed superintendent under Manager Weir. Construction work on the wire tramway is progressing rapidly.

Summit County.

(From Our Special Correspondent.)

Anchor.—At the annual stockholders' meeting at Park City on November 16th the following directors were elected: Francis Smith and F. A. Nims, of Muskegon, Mich.; Ralph T. King and H. F. Meyers, of New York; Samuel Tewksbury, of Lexington, Mich.; E. F. Holmes, of Oscondo, Mich.; D. C. McLaughlin, David Keith and W. V. Rice, of Park City. The directors will meet in December and select the officers. A Bartlett concentrator, which is being introduced by the Colorado Iron Works, was given a trial last week—the first to be set up in Utah. It is claimed that on the test run, completed November 18th, it did fully as clean work as the Wilfley. It is a 3-compartment scheme, the fines being removed first, using less water and more agitation.

Silver King.—Machinery for the new mill, supplied by Fraser & Chalmers, a total weight exceeding 500,000 lbs., is being delivered at the mine. The old concentrating plant closed down early in November.

Valeo.—An ore seam carrying pay values in gold and copper was cut a week ago.

Tooele County.

(From Our Special Correspondent.)

De La Mar.—The new tanks are about finished and the steel framework for the north annex is in place. Work on the mill's enlargement moves rapidly. At present 400 tons ore are hoisted daily.

Kismet Gold Mining Company.—Articles of incorporation were filed with the Secretary of State on November 11th. Principal office, Salt Lake City. Capitalization $300,000, shares $1; with 100,000 shares set apart for treasury needs. Officers and directors are: George A. Lowe, president-

treasurer; Thomas Weir, vice-president; John M. Burt, secretary; G. M. Forbes, John Weir; all of Salt Lake City. The realty consists of a group of claims, practically patented, embracing some 240 acres on West Dip, north of La Cigale.

La Cigale.—Main incline is in 840 ft.; face in black shale hanging wall. In October 81 ft. were driven. The Howell-White continuous roasting furnace, installed under contract with the Trent Engineering and Machinery Company, is ready, and the mill is to be at work before December 1st. S. F. Whitney is superintendent under Manager Scheu. Mr. Henry S. MacKay arrived from Boston yesterday, and plans to remain till the mill has completed the trial test.

Northern Light.—On November 17th it was authoritatively announced that a shoot of rich shipping ore was exposed in virgin ground. Some rock is being sacked which carries 1,000 oz. silver per ton, while there is a strong face of 140 to 500-oz. ore.

Overland.—Under the supervision of Messrs. Gill S. Peyton and William Orr, the mill went in commission last week, and three leaching tanks were charged. The machinery works nicely. It will be the most complete cyaniding plant under 500 tons daily capacity in the district.

Sacramento.—Workings in the south end of the mine have shown ore seams that cause much sensational talk. The big assay certificates are being quietly passed around, so freely as to be looked on with suspicion, though the property has worth. O. P. Posey and some of the Boston Mercur share owners are supposed to have an option on the control.

Wasatch County.

(From Our Special Correspondent.)

Castle Peak Gilsonite.—It was recently announced that H. V. Le Sieur had sold his Castle Peak gilsonite property to William H. Smith and John E. Price, of Denver, for $50,000. There are two veins, situated near the Uinta reservation on the Price and Duchesne Road, 75 miles north of Price, the nearest rail point. There has been considerable development. A steam hoist is to be installed. It is reported that the new owners have a contract to supply 500 tons of gilsonite per month for export to Bremen, Germany.

VIRGINIA.

Alleghany County.

Potts Valley Iron Company.—This company has completed its double-cone washer plant, and is shipping iron ore. The capacity of lump and washed ore is 500 tons.

WEST VIRGINIA.

(From Our Special Correspondent.)

There is an unprecedented scarcity of men in the West Virginia coal-fields, especially Kanawha Valley.

Wetzel County.

Petroleum.—The Big Injun sand development at Brink has produced another gusher. The South Penn and the Hartman Oil Company have been the most active developers of this pool. F. W. Bartlet & Company, on the V. Anderson town lot at Brink, have drilled a well that produced 400 bbls. the first 24 hours.

FOREIGN MINING NEWS

AFRICA.

Transvaal.

The total production of gold for the month of October is reported at 423,217 crude oz., of which the Witwatersrand furnished 400,719 oz., and the outside districts 22,426 oz. This is the first year in which the Chamber of Mines has reported the output for the entire Republic, and the monthly figures are as follows, in crude ounces:

January	336,577	June	365,091
February	321,238	July	382,006
March	347,643	August	398,285
April	353,243	September	408,502
May	365,016	October	423,217

This shows a total for the ten months of 3,700,818 crude oz., equal to 3,034,671 fine oz., or $62,726,649.

The production of the Witwatersrand mines for the 10 months was 3,482,788 crude oz., and is shown for three years, as follows, in crude ounces:

	1896.	1897.	1898.
January	148,178	209,832	313,826
February	167,018	211,000	297,975
March	173,952	232,066	325,907
April	176,707	235,698	335,125
May	195,008	248,305	344,160
June	193,640	251,529	344,670
July	203,873	242,479	359,343
August	213,418	259,602	376,911
September	202,561	262,150	384,080
October	199,889	274,176	400,791
Totals	1,874,244	2,426,837	3,482,788

The total output this year was equal to 2,855,886 fine oz., or $59,288,193. It shows a gain of 1,955,957 oz., or 43.5%, over last year. There are now nine of the new deep-level mines included in the producing list.

ASIA.

India—Mysore.

The production of the Colar Gold-field in October is reported at 34,764 crude oz., a decrease of 100 oz. as compared with October, 1897. For the 10 months ending with October, the total production was 345,573 crude oz., against 320,167 oz. in 1897, showing an increase of 25,406 oz., or 7.9%. The total was equivalent to 311,016 fine oz., or $6,430,901. The production of the leading mines in September was: Mysore, 13,011 oz.; Champion Reef, 12,265 oz.; Ooregum, 4,561 oz.; Nundydroog, 3,434 oz.

AUSTRALASIA.

Tasmania.

The Mines Department reports the mineral exports of the colony as below for the month of September:

	1897.	1898.
Gold, oz.	7,479	5,816
Gold ore and concentrates, tons	92	79
Silver ore, tons	1,771	1,421
Blister copper, tons	546	512
Copper ore, tons	5	55
Tin, tons	174	153
Iron ore, tons	233	....

The total estimated value this year was £87,563, against £97,778 last year.

Victoria.

The gold production reported for September was 70,605 crude oz., against 68,052 oz. last year. For the nine months ending with September, the total output was 599,844 oz., against 575,068 oz. in 1897, showing an increase of 24,776 oz., or 4.3% this year.

Western Australia.

The gold exported from the colony in October was 116,824 crude oz. For the ten months ending with October the total exports were 841,625 oz., against 526,736 oz. in 1897, showing an increase of 314,889 oz., or 59.8%. The exports this year were equal, at the declared value, to 748,159 fine oz., or $15,464,457.

CANADA.

British Columbia.

Crow's Nest Pass Coal Company.—The 50 coke ovens are reported ready to ship 80 tons of coke per day. Material for 50 more ovens has gone in, and their construction will be pushed forward as fast as the weather will permit. The agreement with the Government requires the coal to be sold on a basis of $2 per ton at the mine. The first carload of Crow's Nest coal for Rossland has been shipped from the mines at Coal Creek.

Golden Cache.—At a special meeting held in Vancouver recently, the shareholders voted to appoint a committee on ways and means for the carrying on of the mine. The following committee was appointed: J. O. Benwell, A. McCreery, J. J. Banfield, G. B. Harris and J. H. Caldecott.

British Columbia—West Kootenay District.

(From Our Special Correspondent.)

British America Corporation.—Since July 1st William F. Haskins, superintendent of the Nickel Plate and Great Western, has done altogether 1,800 ft. of work on these properties.

British Columbia Bullion Extracting Company.—L. H. Webber, manager of this enterprise, at Silica, near Rossland, states that operations so far have proved highly satisfactory, and beyond even the expectations of the promoters.

Gross and Net Tonnage.—Heretofore the gross tonnage of the ore shipments have been given, hereafter the figures given will be the net shipments.

War Eagle.—The new steel gallows frame, 100 ft. high from the collar of the shaft to the center of the sheavs, and the new iron shaft house, 40 by 185 ft., and 120 ft. high, are now complete. In his annual report J. B. Hastings, general manager, furnishes the following data: 1894, 47 tons, value $1,146; 1895, 9,981 tons, value $289,951; 1896, 8,920 tons, value $189,944; 1897, 7,406 tons, value $98,896; 1898, 28,523 tons, value $356,844. Total, 54,877 tons; value, $936,781. The workings for the year ended September 30th, 1898, were: 3,480 ft. of tunneling, the average cost of which was $21.15; 451 ft. of raising, $29.78, and 185 ft. of sinking, at an average cost of $96.25 per foot—the total of the new workings being 4,116 ft. There were up to the date given 8,304 ft. of tunneling, 851 ft. of raising, and 665 ft. of sinking, being a total of all workings of 9,840 ft., to which may be added 250 ft. of extras, making 10,070 ft. To the total shipments, as given above, must be added 352 tons, making 28,875 net tons. The gross market value per ton of the ore in metals was: Gold, $18.90; silver, $1.15; copper, $3.46. Total, $23.51. The ore reserve was increased, and ore has been treated carrying $4.12 less value than heretofore, owing to the reduction of smelter and transportation charges.

Paris Belle.—An agreement has been effected. The mining rights go to the Paris Belle Company, while the surface rights are equally divided between the Great Northern Railway Company and the mining company. Most of the ground has already been platted into lots, and these will be divided between the railway company and the Paris Belle Company. This mineral claim comprises 4½ acres of what is considered the best residential area in the City of Rossland. This disposes forever of the vexed question between the squatters and the railway company.

Rossland Ore Shipments.—There have been shipped from Trail Creek mines up to November 15th, the present year, 107,000 tons of ore.

Slocan Ore Shipments.—For the 10 months ending October 13th the ore shipments amounted to 27,085 tons, as follows: Payne, 11,550; Ruth, 3,335; Idaho, 3,635; Slocan Star, 2,373; Last Chance, 1,439; Queen Bess, 1,334; Silverton, 1,000; Camp McGurgan, 1,000; Lucky Jim, 900; Alamo, 541; Reco, 420; Bosun, 220; Sovereign, 80; Treasure Vault, 40; California, 40; Ajax, 33; Canadian Group, 22; Goodenough, 20; Sapphire, 19; Hustler, 19; Coin, 9; Wonderful Group, 8; Fountain Fraction, 7; Argo, 2; Wonderful Bird, 6. The average value of this ore last year, according to W. A. Carlyle's official report, was $110 per ton. The values of the Trail Creek ores, as heretofore given at $37 in official reports, have not been maintained, as shown by J. B. Hastings's annual report of the War Eagle, and it is not unlikely that a proportionate discrepancy between the official and commercial values of the Slocan argentiferous lead ores will be found to exist. The importance of having a correct commercial value given for these ores in public reports is very great, since the tonnage output is rapidly increasing in the West Kootenay District, and even a slight exaggeration in the value per ton makes an important difference in the total valuation. There are now but six weeks' output to be credited to the current year, and the total output for the two divisions, Trail Creek and Slocan, will probably be close to 120,000 and 30,000 respectively, with a tonnage valuation of $23 and $73 respectively. There still remains Nelson Division, the returns of which are not yet to hand.

Nova Scotia—Hants County.

The J. J. Withrow Mining Company, South Viniack District, last month produced 132 oz. of gold from 122 tons of quartz.

Nova Scotia—Lunenburg County.

The Cashen-Hines Mine, at Millipisigate District, yielded 76 oz. gold.

Geo. J. Heseler's Mine, at Gold River, gave 36 oz. from 59 tons ore milled.

Tebbies.—W. T. Tebbies, from his mine, at Brookfield, secured 252 oz. for last month. He has some very rich samples of ore from a lead recently opened.

Nova Scotia—Cape Breton.

(From Our Special Correspondent.)

Wolfram Deposits.—Near Margaree Harbor, Cape Breton, there has recently been discovered in the granite formation a vein of wolframite 2½ ft. thick, said to contain 50 % tungstic acid. This is the first discovery of this ore made in this country. The owners have been offered by German parties £80 per ton for ore running 65% tungstic acid.

Nova Scotia—Guysboro County.

Blue Nose.—This mine and the New Glasgow are now operated under one management, and the ore treated in one mill, the Blue Nose, 20 stamp. They produced in October 365 oz. gold, 50% of which was profit.

Hurricane Point.—The mine produced 168 oz. for the past month, and, it is claimed, looks better as depth is attained. Another rich lode has been found in prospecting on the surface. It is not sufficiently developed to show its real value. The ore, so far, shows heavy, free gold.

Modstock.—Senator Snowball, of Chatham; T. J. Black, of Sackville; F. P. Thompson and Walter Hichners, of Fredericton, N. B., have purchased 57% of the stock of the Modstock Mine, Forest Hill, for the sum of $22,800. This mine has been a steady producer for the past two years, under the management of Wm. J. McIntosh.

Richardson.—The formation of the gold ore belt is now proved to be somewhat unique. It is in the form of a great loop, the two sides running parallel on the surface, striking westerly, the eastern end forming a complete half circle. The sides dip, the one south and the other north, and the end easterly at an angle of 35° at the axis, where it is 18 ft. thick. The mine produced last month 180 oz., although 10 of the 40 stamps were hung up for repairs during the entire month.

Nova Scotia—Halifax County.

(From Our Special Correspondent.)

Dufferin.—All the plant is complete and running, except the mill, which will be in commission by the end of the year. The quantity of ore seems to be satisfactory, and the quality of much of it, judging from appearance, seems assured also. This company, the Montreal-London Gold and Silver Development, have recently acquired the Lake Eagle property adjoining the Dufferin. This gives the company over two miles in length. The veins are known to extend the entire distance.

Guffey Jennings.—The heavy ore belt encoun-

tered recently in this mine, Caribou, at a depth of 500 ft., is reported by the management as looking exceedingly well.

John H. Anderson.—This mine, Lake Catch District, gave 70 oz. from 100 tons of quartz for last month. Several properties have changed hands in this little district recently, and it is stated that both English and American capital is about to be obtained for the development of several properties.

Stuart.—Work on the property at the Phillag District has ceased, reasons other than lean ore being attributed for this action.

Ontario—Pat Portage District.

Regina.—The main shaft is down 450 ft. There are 7 levels, in which 2,300 ft. of drifting has been done, and the sixth level now extends under the lake. The greatest amount of work has been done on the second level south and the sixth level north. The ore is passed over a grizzly into a No. 3 Gates crusher and thence to a 200 ton bin back of the stamps. There are 7 Tremaine mills, with Challenge automatic feeders. The mortars discharge from three sides on 8 ft. amalgamating tables, and the pulp passes thence to Hartz jigs to separate the concentrates. Thence it is distributed over 6 gyrating tables, prepared in the same manner as the amalgamating tables, to catch any fine gold which may have escaped. The concentrates pass from the Hartz jigs to two Berdan pans for further grinding, and are carried thence to the cyanide vats, and there treated in bulk, when sufficient concentrates have accumulated to a 30 day leach. The ore carries 3% concentrates, which run $40 a ton. The mill has a capacity of 70 tons per 24 hours, and the mean crushing per month amounts to 1,800 tons. The returns will be published in London.

The mine is equipped with a 10-drill Ingersoll compressor plant, two 125 H.P. boilers and dynamo for electric lighting, with hoisting machinery. Wood fuel is used, largely jack pine, 14 cords a day being required, costing $2 per cord The mining and milling cost is estimated to be under $4 a ton.

Saw Bill Gold Mining Company.—At the annual meeting in Hamilton, November 17th, the directors' report, which reviewed the transactions in connection with the syndicate deal last summer, was adopted. The directors and officers were re-elected as follows: John H. Tilden, president; F. C. Bruce, vice-president; H. N. Kittson, secretary-treasurer; Messrs. F. S. Wiley, T. W. Lester, Wm. Southam, A. M. Wiley and H. C. Beckett.

Yukon District.

United States Consul J. C. McCook reports from Dawson, under date of October 1st: "During the past month some 30 steamers arrived from St. Michaels, Alaska, besides the usual number coming down the river connecting with the passes. Four of the steamship companies had to dispose of their steamers here soon after arrival, in order to get sufficient funds to pay the wages of their crews and other charges against them. The boats were then placed under Canadian registry, and now ply on the Upper Yukon route, which has been more profitable for small steamers than the long route from St. Michaels, which entails the risk of stranding on sand bars and the payment of $15 a cord for wood to feed the boilers during a 30 or 60 days' trip. On some steamers the passengers were compelled to cut wood and bring it on board ship, on penalty of not being carried to Dawson, and the companies refused to pay them for such work done. There being no court here for the past six weeks, except a police court, the claims of passengers could not be settled. Dawson City is beginning preparations for the long winter. Large quantities of logs are being hauled in to serve as fuel. It takes from 12 to 15 cords to heat a small cabin during the winter. Many needed improvements have been inaugurated in Dawson since the advent of Mr. William Ogilvie, the new commissioner. Dawson is soon to be incorporated as a city or town with a mayor and board of aldermen. The winter diggings generally begin about the middle of November. There will be more prospecting done this winter. Prospectors have begun to cut wood for thawing ground, erect cabins, and freight supplies to the different creeks. It is safe to say that there will be 5,000 people working on the different creeks in this district during the coming season. The bench and hillside claims are now receiving more attention than the creek claims. It has been found that where the creek claims proved barren, the bench or hillside claims on the same creek contain good gravel, and from the output of gold from the bench claims this season it is expected that the product of next year will equal, if not exceed, the amount of gold taken from the creek claims. The cost of working a bench claim is less, because the ground, being shallower to bedrock, requires less timber for burning. It can also be worked the year round, whereas a creek claim can be worked only during the winter season."

COAL TRADE REVIEW.

New York Nov. 25.

Anthracite.

The anthracite trade shows a very heavy production at the mines and a heavy movement West. Car supply at the mines is reported easier, and the November production will probably be all of 5,000,000 tons. There is little prospect of higher prices, as roads are storing but little coal, evidently going on the principle of large business and small profits. At the head of the lakes the stocks on hand are heavy, but there is a good movement from the docks. As we have noted before, more people in the West than for several years past will burn anthracite this winter, and if any long spell of cold weather sets in, the tonnage burned will be decidedly heavier than usual. The shortage of chestnut in Chicago territory continues. Buffalo trade is reported good.

In the East trade continues to move along in a strictly hand to mouth way. The scarcity of chestnut in the West led all the roads having a Western outlet to ship chestnut into Western territory. Consequently but a comparatively small amount has come East. As yet, though that size is in short supply at seaboard points, and some roads talk of higher prices for it, there is enough coming forward to prevent an actual scarcity. In fact, we are aware of one sale of a large amount of chestnut at New York for $3 a ton. It was yard coal, but the price shows that as yet the supply is fair. Continued demand West, however, may affect the Eastern market decidedly before long. Prices on all prepared sizes feel the effect of the heavy output, and the scramble of the roads to get rid of coal. The present year's history of the attempts to regulate output and prices is a repetition of last year's. Agreements carefully kept during the summer have been thrown to the winds when winter buying started, with the result that coal is now selling very cheaply, indeed. Buyers make prices, and some of these prices are away down. Just how low coal has sold is hard to say, but we are told of such prices as these for free burning anthracite, f. o. b. New York: Broken, $3; egg, $3.25; stove, $3.45@$3.50; chestnut, $3.25. The small sizes are quoted: Pea, $2@$2.25; buckwheat, $1.50@$1.90; rice, $1.30@$1.50.

Bituminous.

The Eastern seaboard bituminous trade moves along steadily. A large tonnage is being handled without attracting much attention. It is reported that there was a meeting of the soft coal road presidents Tuesday, though we are unable to verify this. The idea of holding the meeting was to take some action regarding an improvement on soft coal freights the coming year. Everything seems ripe for such a move, and an agreement that would be adhered to would mean a saving of 25c. a ton on a movement of 25,000,000 tons, or a saving for the roads of between $6,000,000 and $7,000,000 in freight. To predict any sort of an agreement now, however, would be mere guess work. We have not heard that anything was accomplished at the meeting, and some operators seem surprised at the knowledge that a meeting was to take place. So far no contracts are reported taken for coal for the coming year. There seems to be a feeling that nothing will be done until some of the operators, backed by the road they ship over, make a decided move. Then the usual result may be expected—a general scramble.

The far East is still dull and the best part of the demand for coal is coming from the Long Island Sound ports. New York Harbor trade takes a fair amount of coal, while all trade is but little changed. There are still inquiries for coal for export business.

Transportation from mines to tide is poor. Some complaints come in from all along the line. Car supply is also poor. In the coastwise vessel market, freights are slightly weaker, and shippers are wondering whether they will not see a reduction of 5c. from the prevailing rates, but any change will probably depend entirely on the weather. We quote current rates of freight from Philadelphia as follows: Providence, New Bedford and the Sound, 70c.; Boston, Salem and Wareham, 85c.; Portland, 85@90c.; Lynn, 95c.; Newburyport, $1; with 5 to 10 c. above these figures from the further lower ports.

Prices show no improvement, and we continue to quote: Clearfield, best grade, $1.65 at Philadelphia, with poorest grades down to $1.20; George's Creek, $1.65 at Baltimore; New River, $1.65 at Newport News; Pocahontas, $1.65 at Norfolk. At New York the best grades are $2.20; poorest, $1.45.

Birmingham, Ala. Nov. 21.

(From Our Special Correspondent.)

There is much coal being mined and disposed of in the State of Alabama. There is absolutely no trouble at any of the mines and at pretty near all of them there is steady work and large outputs are reported.

President W. R. Fairley, of the Alabama District, United Mine Workers of America, stated last week that there was no trouble among the miners in this State and that there was much work going on among the many mines. Chief State Mine Inspector J. de B. Hooper has issued a report to the Governor of the State concerning the mining trade in Alabama. He touches on the accidents in mines and on other matters, including the great production of the Tennessee Coal, Iron and Railroad Company. He gives the output for 1898 up to September 1st at 4,108,351 tons coal and 83,104 tons of coke.

It is predicted, with the report of the inspector in mind, that the output for the year will be 6,162,500 tons, against 5,893,771 for last year. It is predicted also that the coke production for this year in this State will be 1,246,500 tons, against 1,395,252 tons last year.

The Warrior Coal Mining Company was incorporated last week in this city, with $50,000 capital, by R. H. Pearson and others. The company will run mines at Warrior, Ala., 20 miles above here in this county on the Louisville & Nashville Railroad.

Pittsburg. Nov. 24.

(From Our Special Correspondent.)

Coal.—There is a movement on foot to form a combination of coal operators to curtail all the coal mined on the Monongahela Valley. This corporation would be a big thing, and would control the coal trade from Pittsburg to Cairo, Ill. The scheme has been talked of before, but has never gone through. However, several meetings have been held, and, as all the operators are interested, it will likely go through, unless some petty jealousies break it up. The diggers from the Fourth Pool Mines are endeavoring to force scale prices at two mines where, it is claimed, they are not paid. The trouble at the Brown Mines has not been settled. The miners at the Lovedale and Linsined Mines in the second pool have decided to strike for the district price; these two mines are operated by co-operative companies, and it is claimed that they have been getting less than the district price.

The Johnson Coal Company, operating near Fayette City, has contracted with the Niles Manufacturing Company for a new tipple and coal hoisting plant, to be erected at its new mine at Arnold Ridge No. 2. The contract price is $50,000. With the resumption of the window-glass factories, there has come an increased demand for coal, which to some extent makes up for the deficiency created by the extraordinary dullness in the river shipping trade. A few small shipments were made since last report. The rail mines are putting out as much coal as their scant supply of cars will permit. There is still a good deal of coal being mined for lake shipment, and the demand for local trade is also quite large at present.

The Monongahela Coal Company was organized a number of years ago, composed of five shippers of Pittsburg coal to New Orleans. Each of these are annually given an allotment, which they must supply at New Orleans, no more, no less. This plan worked so well that it is contended that Cincinnati and Louisville markets can be supplied in the same manner, thus putting a stop to overloading and glutting the market.

It is reported that W. P. Rend intends importing Colorado miners, which causes a good deal of excitement.

Connellsville Coke.—The trade continues to boom, principally by the scarcity of cars. There were not so many new ovens fired in the Connellsville coke regions last week as the few previous weeks, but the region made an excellent showing; there were 204 ovens added to the active list. The regions now shows 15,444 active ovens, out of a total of 18,904; the largest active list that has been reported for any period this year. The unsteadiness evinced in the iron trade last week is being noticed in the coke trade; the general condition is about the same. But the causes which have led to the firing of the ovens in the last weeks are not so pushing.

The oldest coke worker, John Broetsky, said to be 102 years old, able to work, a remarkable man, is employed at the Trotter works of H. C. Frick. He is a coke drawer.

Production for the week, 159,950 tons; increase, 1,562 tons; in the running order, 6,250 ovens made six days, 8,753 ovens five days, 121 ovens four days, 50 ovens, the Semet-Solvay By-Product plant, seven days, an average of 5.46 days. Shipment, in tons, amounted to 162,933, against 159,776 tons the preceeding week. Week's coke shipments: To Pittsburg, 3,035 cars; sent West, 4,950 cars; sent East, 1,410 cars. Total, 9,395 cars.

The Latest.—Reports from the Connellsville region state that coke workmen are in great demand and that the firing up of new ovens has given work to every man in the region that was idle, and many from other places have been engaged.

SLATE TRADE REVIEW.

New York. Nov. 25.

A holiday intervening has caused something of a lull in the week's business. The consumption of roofing slate, however, has shown practically little change from last week; but it is

stated in some quarters that prices are likely to improve, as quarries are rapidly cleaning up their stock piles. In the Vermont section, for instance, operations have recently been curtailed by about two hours a day, and it is said that the stock of desirable roofing slate is limited. Where about 25,000 tons of roofing slate were available last August, to-day the total is something like 5,000 tons, and of this amount but a small proportion is in large sizes. In the Pennsylvania regions we understand that some of the larger quarries are making good efforts to dispose of their stocks, especially that having faded edges. The starting up again of the Bangor Union employees at the new terms of $2.25 per day of 10 hours, and at $2 per nine hours, will increase the output of the region by several thousand squares of roofing slate each month. No settlement has yet been reached by the other quarrymen who have gone on strike owing to a 10% reduction in wages, and the likelihood is that they will not start up again for several months.

In mill stock demand is fair. Slate slabs for burial purposes are usually ordered in large lots, and we understand Woodlawn Cemetery orders 10,000 ft. at a time from a large concern in New York. The price of mill stock depends upon the size and shape, and where marbleized slate is called for, upon workmanship. For plain work, however, such as 12 in. tile and treads made from red slate, makers quote for 1 in. stock 40c. per square foot, and for 1½ in. stock 60c.

The list of prices per square for No. 1 slate, standard brand, f. o. b. at quarries, are given below:

Prices of Roofing Slate.

Size, inches	Monson or Brownville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
		$	$	$	$	$	$	$	$
28 x 14	.....	.....	.....	.....	.....	.....	2 60	.....	.....
26 x 24	.....	.....	.....	.....	.....	.....	2.60	.....	.....
24 x 16	.....	.....	.....	.....	.....	4.75	.....	.....	.....
24 x 15	.....	.....	.....	.....	.....	4.75	.....	.....	.....
24 x 14	6.10	3.35	3.00	3.00	3.50	4.85	2.50	3.50	.....
24 x 13	.....	.....	.....	.....	.....	4.85	.....	.....	.....
24 x 12	6.60	3.35	3.00	3.00	3.50	5.00	2.60	3.50	.....
24 x 10	.....	.....	.....	.....	.....	5.00	.....	.....	.....
22 x 14	6.10	.....	.....	.....	.....	5.00	2.50	3.50	4.50
22 x 13	.....	.....	.....	.....	.....	5.00	.....	.....	.....
22 x 12	6.60	3.50	3.00	3.00	3.00	5.00	2.6	3.50	..
22 x 11	6.50	3.50	3.00	3.00	3.00	5.00	2.75	3.75	.....
20 x 14	6.40	..	.....	.....	..	.....	2.50	3.50	.....
20 x 13	.....	.....	.....	.....	.....	5.00	.....	.....	.....
20 x 12	6 90	3.50	3.00	3 60	3.75	5.00	2.60	3.75	.....
20 x 11	6.80	.....	.....	3 25	.....	5.00	2.60	3.75	.....
20 x 10	6.80	4.00	3.25	3.25	3.80	5.10	2.75	4.00	10.50
18 x 18	.....	4.25	.....	.....	.....	.....	.....	.....	.....
18 x 14	6.50	.....	.....	.....	.....	.....	.....	.....	.....
18 x 12	6.80	3.50	.....	3.00	.....	5.00	2.60	3.50	.....
18 x 11	7.00	.....	.....	.....	.....	5 00	2.50	3.75	.....
18 x 10	7.20	4.00	3.25	3.25	3.80	5.10	2.60	4.00	10.50
18 x 9	7.10	4.00	3.25	3.25	3.80	5.10	2.60	4.00	10.50
16 x 16	7.00	4.25	.....	.....	.....	.....	.....	.....	.....
16 x 14	.....	4.25	.....	.....	.....	.....	.....	.....	.....
16 x 12	6.80	3.50	.....	3.00	..	.....	2.50	3.50	.....
16 x 11	6.90	.....	.....	.....	.....	.....	.....	.....	.....
16 x 10	7.10	4 00	3.25	3.25	3.80	5.00	2.50	4.00	10.50
16 x 9	7.00	4 00	.....	3.25	3.80	5.10	2.25	4.00	10.50
16 x 8	7.20	4.00	3.25	3.25	3.80	5.10	2.25	4 00	10.50
14 x 14	7.00	4.25	.....	.....	.....	.....	.....	.....	.....
14 x 12	6.50	.....	.....	.....	.....	.....	2.25	.....	.....
14 x 10	6 60	3.50	3.00	3.00	3 75	...	2.25	3 75	10.50
14 x 9	6.50	.....	.....	.....	3.40	4.85	2.25	3.75	10.50
14 x 8	6 69	3.75	3.10	3.00	3.40	4.85	2.20	4.00	10.50
14 x 7	6.40	3.75	3.10	3.00	3.40	4.85	2.15	4.00	10.50
12 x 10	5.80	3.50	..	.....	.....	4.60	2.20	3.25	.....
12 x 9	5.60	.....	.....	.....	.....	4.60	2.15	3 25	.....
12 x 8	5.50	3.00	.....	3.00	3.25	4 60	2.15	3.25	9.00
12 x 7	5.00	3.00	.....	3.00	3.25	4.60	2.15	3.25	9.00
12 x 6	4.80	3 00	.....	3 00	3.25	4.60	.....	3.25	8.50
11 x 10	.....	3.50	.....	.....	.....	.....	.....	.....	.....
11 x 8	4 50	.....	.....	.....	.....	.....	.....	.....	.....
11 x 7	4.00	.....	.....	.....	.....	.....	.....	.....	.....
10 x 12	.....	.....	.....	.....	.....	.....	.....	.....	4.50
10 x 11	.....	.....	.....	.....	.....	.....	.....	.....	4.50
10 x 8	4.00	.....	.....	.....	.....	.....	.....	.....	6.50
10 x 7	.....	.....	.....	.....	.....	.....	.....	.....	6.50
10 x 6	.....	.....	.....	.....	.....	.....	.....	.....	6.50
9 x 7	3.50	.....	.....	.....	.....	.....	.....	.....	.....

A square of slate is 100 sq. ft. as laid on the roof.

In Brownville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3-16 in. thick. Purple sizes run 24 by 12 and 14 by 7, and vary from $3.75 to $4 per square. Variegated and mottled, $2.25@$2.90 per square, according to size. Intermediate sea green, sizes 24 by 14 to 18 by 10, $2.25@$2.35; 16 by 12 to 16 by 10, $2.10; 16 by 9 to 14 by 8, $2 per square.

There is a good demand for slate flour among oil-cloth and paint manufacturers, and for the red and olive article quotations are 1c. per lb. in barrel lots and ½c. per lb. for ton lots, or $7.50 per ton in carload lots.

The movement of roofing slate from Slatington and Walnutport, Pa., for the week ending November 17th, shows an improvement over the previous week, but the shipments of blackboards have been less. In school slates a small increase is noticeable. The shipments from Danielsville, Pa., for the week ending November 17th amounted to 469 squares roofing slate, 75 crates blackboards, and 75 pieces and two carloads flagging, all showing a decrease as compared with the previous week.

Export business has fallen somewhat, owing to the scarcity of shipping room and the high ocean freight rates. At present a large exporter has about 300 tons of roofing slate waiting shipment to Copenhagen, while others have similar quantities looking for vessels to the European market. The exports to Denmark are not in large lots and the freight rate is about 17s. 6d., although as high as 20s. has been asked. In the Danish market buyers have been accustomed to order Portmadoc, North Wales, slate in sizes of 26 by 16, 24 by 16 and 24 by 12 in. This is a blue-black slate. In that market there are practically only two large importers.

Orders have been booked recently for about 1,500 tons of roofing slate for London, which will be shipped within the next 12 months. These orders were secured in competition with Welsh quarries, and were awarded to the lowest American bidder after several months' consideration. They ask principally for 20 by 10 in. roofing slate.

South Africa has taken some slate this week. The freight rate to Natal and Cape Town is about 22s. 6d. to 23s. So far only small quantities of roofing slate have been shipped, and the orders received have come through London.

Australia shows a good demand. Just now there are several orders in the market, and with the ruling low freight rate to Sydney and Melbourne (about 10s.) exporters will gladly take the business.

During the five days ending November 22d the exports from New York were as follows: To Liverpool, 17 tons and 1 carload ($302); London, 5 carloads ($1,000); Bristol, 5 carloads ($1,530); Hull, 4 carloads ($836); Amsterdam, Holland, 385 cases ($200); Cape Town, South Africa, 144 packages and 122 cases ($818); Delagoa Bay, South Africa, 3 cases ($10); St. John's, Newfoundland, 17 cases ($66); Kingston, Jamaica, 36 cases ($101); total value, $4,837. This brings the total shipments for the three weeks this month to $48,000, which compares with $55,239 for the whole of November, 1897.

CHEMICALS AND MINERALS.

(For current prices of chemicals, minerals and rare elements, see also page 660.)

New York. Nov. 25.

Heavy Chemicals.—Business is still improving, and buyers are becoming interested in next year's contract prices. The United Alkali Company's agents here have announced their figures on bleaching powder. Chlorate of potash has shown a better inquiry, especially for next year's business. The product of the Bay City plant is offered on the local market now. Imports during the five days ending November 23d included 288 casks and 25 boxes bleaching powder; 140 bbls. soda crystals; 64 tierces and 84 casks soda ash; 25 boxes caustic soda; and 100 cases German cyanide of potassium. Domestic receipts included 415 sacks soda ash, 59 packages, 7 bbls. and 6 kegs potash, and 2,329 sacks borax. Little was done in export business.

Quotations are: Caustic soda, domestic 60%, $1.50 per 100 lbs.; 70@74%, $1.40; 76%, $1.50; all f. o. b. works; $1.55@$1.65 delivered. Foreign caustic soda, high test, $1.60@$1.70 delivered, according to test and quality. Powdered caustic soda, 2¾@3c. per lb. for large lots, and ¼c. more for smaller quantities, according to make and test. Alkali, domestic, 55@60c. f. o. b. works; 65@70c. delivered; foreign, B. & M. 70@75c. Bleaching powder, English prime brands, $1.65@$1.70 per 100 lbs.; other brands, $1.40@$1.55; Continental F. prime, $1.50@$1.65. Bicarb. soda, domestic ordinary, $1.15@$1.25 per 100 lbs. f. o. b. works. Natrona brand, $1.65; "Arm and Hammer" brand, $3.25@$3.50, less the usual discount; foreign, $2.12½@$2.25 per 100 lbs., according to brand and style of package. Sal soda, domestic, 55@60c. per 100 lbs. f. o. b. works, less the usual discounts; English, 62½@65c. per 100 lbs. Concentrated sal soda, foreign (crystal carbonate), $1.60@$1.65 per 100 lbs.; domestic (monohydrate crystals), $1.25@$1.30 per 100 lbs.; "snowflake," $1@$1.12½ f. o. b. Syracuse. Chlorate of potash, crystals, 9½c.; powdered, 9¾c. per lb. for large lots.

Acids.—The new contract season is near at hand, and acid makers are hustling their sales agents. Buyers are preparing their 1899 orders, and within the next few weeks business will improve. Prices, on the other hand, remain practically unchanged, although it is understood large consumers will not be refused a concession. In oxalic acid further contracts have been booked at 6½c., and imports this week amounted to 30 casks. Blue vitriol is still firmly held, owing to a good demand, and little of the cheap grades is offering.

Quotations per 100 lbs., New York and vicinity, are as follows: Acetic acid, commercial, No. 8, $1.35@$1.45; muriatic acid, 18°, $1.10 for drums and $1.15@$1.75 for carboys; 20°, $1.20@$1.87½; 22°, $1.35@$2.25, according to quantity and brand. Nitric acid, 36°, $3.50@$4.75; 38°, $3.75@$4.62½; 40°, $4@$4.87½; 42°, $4.62½@$5.25. Oxalic acid, $6.50@$6.75. Mixed acids, according to mixture. Sulphuric acid, 66°, $1.10 for drums and $1.15@$1.75 for carboys. Chamber acid, 50°, in a jobbing way, $11.50@$12 per ton f. o. b. factory. Blue vitriol (copper sulphate), best grades, $3.62½@$4.

Brimstone.—Early in the week the market became unsettled upon the arrival of 3,450 tons at New York; best unmixed seconds were obtainable at $21, and thirds $2 less per ton. To-day holders are asking $22 for seconds, and $19.50@$20 for thirds. Shipments are quoted at $21.50 for seconds and $19 for thirds. The imports of sulphur into Great Britain for the ten months ending October 31st were 15,423 tons, against 18,201 tons last year.

Nitrate of Soda.—Buyers are not asking for much nitrate of soda just now, but sellers continue to ask up to $1.55 for spot goods. However, as low as $1.52½ is understood to have been quoted. Futures rule at $1.55 per 100 lbs., although distant positions can be secured at $1.53. The demand for nitrate of soda has been better this year than last. The shipments to the United Kingdom have fallen below the two preceding years, but this has been made up by France and the United States. The production of nitrate of soda during the present year has been larger than in 1897 and 1896, but the visible supply has been less. The number of oficinlas producing in 1898 averaged 44, against 41 in 1897, and 45 in 1896.

Pyrites.—Miners are rushing forward to fill their orders before the winter sets in, consequently there is more activity in the market. Imports at New York this week included 2,200 tons of copper pyrites from Tilt Cove. A better demand exists abroad for pyrites, and the imports into Great Britain for the 10 months ending October 31st amounted to 546,416 tons, against 517,043 tons in 1897.

Charters noted this week include a British steamer of 2,800 tons from Huelva to Charleston at 10s. 6d., December 15th sailing, and another of 2,400 tons to New York or Boston at 10s. 9d., prompt.

Spanish pyrites contain from 46% to 51% sulphur, the American from 42% to 44%, and Pilley's Island, N. F., about 50%. Quotations are: American lump ores (basis 42%), $3.25 per long ton f. o. b. mines, Mineral City, Va.; $5.25 per long ton f. o. b. mines, Davis, Mass., and $6.50 per long ton for Pilley's Island, delivered in New York. Fines are $2.75 per long ton f. o. b. Mineral City, Va.; $4.25 at Davis, Mass., and $4.50 for Pilley's Island, delivered in New York. Spanish pyrites, 10@13c. per unit, according to percentage, delivered ex-ship New York and other Atlantic coast ports.

Fertilizing Chemicals.—There has been a heavy break in freight rates in New York recently, causing some increase in the demand for ammoniates at this point, but the purchases are not large. Sulphate of ammonia is very firm abroad, notwithstanding the large output during the month of October. In America the demand has been such as to absorb all the domestic make. However, there is likely to be an increased output when the new plants in the South get to work. In London, England, the Sulphate of Ammonia Committee has recently offered 500 guineas for the best essay on the utility of sulphate of ammonia in agriculture, with a view, it is thought, of extending the use of that product. England is shipping considerable sulphate of ammonia at present to the Hawaiian Islands and to other southern points.

Export business is again looking up, and we note 1,044 bags and 303 bbls. of fertilizers have been sent to Central America, Mexico and the West Indies.

Quotations are: Sulphate of ammonia, gas liquor, $2.62½@$2.65 (basis of 25%). Bone, $2.52½@2.55 per 100 lbs. Dried blood, high grade Western, $1.77½@$1.80 per unit; New York, $1.65@$1.70 per unit. Azotine, $1.70@$1.75, basis New York. Concentrated phosphates (30% available phosphoric acid), 57½c. per unit. Acid phosphates, 13@15%, av. P_2O_5, 60@65c. per unit at sellers' works in bulk. Dissolved bone black 17@18%, P_2O_5, $16@$16.50 per ton. Acidulated fish scrap, $10@$10½; dried, $19 f. o. b. fish factory. Ammonia superphosphates, high grades, $25@$26 per ton. Tankage, high grade, $15@$16 per ton f. o. b. Chicago, $18.50@$19 at New York. Concentrated tankage, $1.45@$1.50 per unit f. o. b. Chicago; low grade, $13@$13.50 per ton. Bone tankage, $19.50@$20.50; ground bone, $24@24.50 delivered. Bone meal, $1.40@$1.50 f. o. b. Chicago.

Phosphates.—The dull season is upon us and business will doubtless be small in volume until next spring. The superphosphate makers are all well supplied with phosphates. We understand two large speculators in phosphates in Germany have been caught short and several law suits are pending. Export business has been small, although orders are being booked for high grade Florida rock for shipment until next October on the basis of $8.50 per ton. The charter noted last week for Australia is one of several to carry phosphate rock from Tampa to Sydney and Melbourne. The freight rate is comparatively low. At present the following c. i. f. quotations rule to United Kingdom or North Sea ports: Florida hard rock, 77@80%, spot, 9½d. per unit, and 1d. less for summer and autumn, 1899; land pebble, 68% to 73%, 7¼d.; Peace River, 58% to 63%, 7d.; Tennessee, 78% to 80%, 7¼d. per unit. Algerian

phosphates have all been contracted for over next year, it is said, though for 63% to 70% rock, 7¼d. per unit is quoted. Charters noted included a British steamer of 1,035 tons from Tampa to London at 20s., January sailing, taken abroad, besides several from southern ports for coastwise trade.

Quotations at New York are: Florida high grade, 75% to 80% rock, $8.25@$8.50 per long ton f. o. b. Fernandina. The freight rate to New York is about $1.80 per ton. Florida land pebble, 68@73%, quoted at $5.25@$6 per ton, delivered in New York, South Carolina ground rock is worth $5.50 to $5.75 per short ton, delivered in New York; undried, $3 per 2,240 lbs. f. o. b. Ashley River; hot air-dried, $3.25@$3.45 f. o. b. same place. Tennessee phosphates, $1.65@$2 f. o. b. Mt. Pleasant, according to quality

Charleston, S. C. Nov. 17.

(From Our Special Correspondent.)

The October shipments of phosphate rock were very light, as follows: Crude, 8,485 long tons, against 10,851 tons last year, and 11,398 tons in 1896. The bulk of the rock now being sold is going to local manufacturers, who try industriously to keep the knowledge of it to themselves. There is, however, a fair average of consumption. For high grade land rock, kiln dried, $3 is quoted f. o. b. at the mines, Ashley River, but firm offers might shade this figure. No ground rock has been offering since close and sale of the Wappoa mills. There is still a fair demand for acid phosphates at $5.75 for bulk, f. o. b. at factories for 14% goods, cash against documents. The sale of the Chicora plants to the Virginia-Carolina Chemical Company has been confirmed by sellers' stockholders. Full particulars will not be given out, but it is understood that the selling price was $400,000 for the plants, and $250,000 for material, etc., on hand. The price is variously estimated at $650,000 to $700,000, and is generally believed to be the latter, and not $800,000, as stated by the "Oil, Paint and Drug Reporter" of November 14th.

Liverpool. Nov. 16.

(Special Report of Joseph P. Brunner & Co.)

For ordinary lines of chemicals the market is dull and featureless. There has been a considerable movement in sulphate of copper recently and at the makers' conference this week minimum prices were fixed at £18 15s. for balance of this year and £19 5s. for spring delivery; makers, however, are holding for higher figures than the minimum stated.

Soda ash is in moderate request, while export prices depend entirely upon destination and foreign competition. The maximum range for tierces may be called about as follows: Leblanc ash, 48%, £4 5s.@£4. 10s; 58%, £4 10s.@£4 15s. per ton net cash. Ammonia ash, 48%, £4@£5s.; 58%, £4 5s.@£4. 10s. per ton, net cash; bags are 5s. per ton under price for tierces. Soda crystals are quoted at £2 17s. 6d. per ton, less 5% for barrels, but special terms are given for certain quarters. Bags are 4s. per ton under price for barrels. Caustic soda is in light request and easier. We quote spot range as follows: 60%, £5 17s. 6d.@£6; 70%, £6 17s. 6d.@£7; 74%, £7 7s. 6d.@£7 10s.; 76%, £7 10s.@£7 12s. 6d. per ton, net cash. Bleaching powder is firmer for hardwood as regards outside unbarred makes, which are scarce, and holders quote £5 2s. 6d.@£5 7s. 6d. per ton. Chlorate of potash is quiet at nominally 3¾d. per lb., while there is little going on to test the market.

Bicarb soda is selling at from £5 5s.@£6 15s. per ton, less 2½% according to market for the finest quality in 1 cwt. kegs, with usual allowances for larger packages.

Sulphate of ammonia is in good demand, and although top figures have not been fully maintained, holders are firm at £10 5s.@£10 7s. 6d. per ton, less 2½% for good gray 24@25% in double bags f. o. b. here, as to quality

Nitrate of soda is firm at £7 17s. 6d.@£8 per ton, less 2½% for double bags f. o. b. here, as to quality and quantity.

Carb ammonia, lump, 2¾@2⅞d. per lb.; powdered 3@3⅛d. per lb., less 2½%.

IRON MARKET REVIEW.

NEW YORK, Nov. 25, 1898.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending Nov. 26, 1897		Week ending Nov. 25, 1898.		From Jan., '97.	From Jan., '98
	F'ces.	Tons.	F'ces	Tons	Tons	Tons.
An'racite	27	17,150	28	21,150	769,819	1,030,173
Coke.....	137	191,850	148	203,350	7,381,575	9,189,099
Charcoal.	19	4,650	20	6,125	215,660	278,221
Totals..	183	213,650	196	230,625	8,367,054	10,497,493

While we have still a waiting market, in some degree there are more signs of activity than were manifest a week ago. Inquiries for foundry pig are beginning to come in from some large consumers, notably the cast-iron pipe foundries. While these buyers do not seem to have been alarmed by talk of higher prices, they probably realize that December is almost here, and that it is time to look after next year's contracts. The unexpected size of export business may also have stimulated these inquiries. Some buying of Bessemer pig in the West is reported also, and there is quite a demand for basic pig. The parties who were last week in a state of mind lest a pig-iron famine should be impending, seem to have had their apprehensions allayed—probably by the general ridicule with which the market received their doleful predictions.

In finished iron and steel also there has been a more active business. Some large contracts for structural steel are pending, and there have been heavy sales of bar iron, chiefly to carbuilders, in the West. The railroads seem likely to be good customers for equipment next year, and have already let many contracts.

Export orders continue large, and there is a large amount of business under negotiation at the present time. The main question just now is of freight rates, which are going up, and threaten to prove a difficulty in the way of contracts which turn on a narrow margin.

The great topic of discussion is the break-up of the proposed new steel rail pool, after almost everyone had accepted it as practically completed. It has failed, so far as is known, because the Federal Steel Company grasped at too much, and the Carnegie Steel Company is in too independent a position to submit to any undue claims. It is announced that there is an understanding which will prevent any cutting in prices. Most people, however, take this for what it is worth, as an evident attempt to bolster up Federal Steel stock on the exchanges. It has not prevented a break in that stock, which may go further. The position in the steel trade is fully discussed in our editorial columns.

Birmingham, Ala. Nov. 21.

(From Our Special Correspondent.)

Steadily the stocks of pig iron on hand in this section of the country are being worked off, and if the present conditions continue there is no telling how the demand for iron is to be met. It is an undeniable fact that the consumption is by far greater than the production, and there will sooner or later be a termination of the stocks on hand. The shipments are greater than ever, and already for the 10 months of 1898 they show a large increase as compared to the 10 months of last year. There is work being done on four furnaces in this district, and in a few weeks at least one of them will be ready for the torch in case it should be deemed necessary to start it to keep up with the demand for pig iron.

The quotations remain steady. The old figures are yet given, $7.75 for No. 1, Foundry, with a 25-cent grade for Nos. 2 and 3 Foundry, and $6.50 for Gray Forge. Some of the foreign markets are quoted 25c. higher than these figures and no hesitation can be noticed in the purchasing.

For the first 10 months of this year the shipments of pig iron from the furnaces of Tennessee and Alabama were 1,095,442 tons, against 885,894 tons for the same period last year, an increase for this year of 209,548 tons. The shipments last year were larger than they had been in the history of the South in iron making. Of the above amount of pig iron the Birmingham District alone shipped in the first 10 months of this year 696,392 tons, as against 593,181 tons, a difference of 103,211 tons this year. The following are the figures given of the shipments by the month from this district, during this year: January, 70,000 tons; February, 62,900; March, 66,880; April, 61,439; May, 61,769; June, 61,000; July, 62,832; August, 78,932; September, 80,000; October, 90,640; total, 696,392 tons.

The following are the amounts of iron exported from Alabama furnaces this year: January, 15,000 tons; February, 13,417; March, 19,371; April, 6,169; May, 2,402; June, 4,000; July, 8,744; August, 21,176; September, 20,000; October, 37,754; total, 148,033 tons.

It is estimated that during the 10 months of this year there were shipped from this district 27,880 tons of cast-iron pipe, while from the States of Alabama and Tennessee there were shipped 109,534 tons of cast-iron pipe. There is a decrease of 43,346 tons of iron exported from Alabama furnaces this year, as compared to the first 10 months of last year.

The market at present is spoken of as in a very satisfactory state. The Tennessee Coal, Iron and Railroad Company, the Sloss Iron and Steel Company, the Pioneer Mining and Manufacturing Company, and the Woodward Iron Company, right in the Birmingham District, are reported as shipping almost as much iron as they can. It is true that at the plant of each of the companies named there is much activity and the furnaces are working with a vim. The fourth furnace at Ensley City is nearing completion as far as repairs are concerned. Whether all four of the furnaces will be put to work or one of the three now in blast blown out when the fourth is lighted is not stated. Some speculation has been entered into, however, as to what will be done when the big steel mill now in the course of construction is finished as to furnishing iron. It is said that at least four furnaces will have to work hard to keep the big mill in full supply of pig iron.

During the last fortnight there have been rumors of absorption on the part of the Federal Steel Company of the stock and properties of the Tennessee Coal, Iron and Railroad Company and the Sloss Iron and Steel Company, in this section. These rumors have been denied by officials of both of the companies named. There was color lent to the stories in the fact that during the week just over the directors of the Sloss Iron and Steel Company held a meeting in this city. What they did could not be learned, but inasmuch as their election of new directors and officers does not occur until spring, then the holding of a four days' meeting caused some comment. President Baxter, of the Tennessee Coal, Iron and Railroad Company, was approached on the subject at least two weeks ago, and he said there was nothing in the rumors.

Buffalo, N. Y. Nov. 23.

(Special Report of Rogers, Brown & Co.)

The situation as to supply and demand in local pig-iron circles will ease up considerably with this week, because of the closing of the canal, all energies having been bent recently to getting off the last water shipments of the season. The year 1898 has probably witnessed the largest movement of pig iron by the canal route in the history of that water-way. The demand continues fairly good, with a noticeable increase in the inquiry for forward deliveries, looking towards the placing of contracts for the winter and spring months. Prices are firm and full at the quotations given below, which are on the cash basis, f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $11.50; No. 2 strong foundry coke iron, Lake Superior ore, $10.75; Ohio strong softener No. 1, $11.50; Ohio strong softener No. 2, $10.75; Jackson County silvery No. 1, $14.; Southern soft No. 1, $11.75; Southern soft No. 2, $11.50; Lake Superior charcoal, $12@$12.50; coke, malleable, $10.75.

Cleveland. Nov. 22.

(From Our Special Correspondent.)

Iron Ore.—The market during the past week has been very quiet compared with some of the weeks during the autumn. Very little has been done during the past 10 days in the way of sales, but not much more business is expected to be done until the formal close of the season. Practically the season has already closed, especially so far as the movement of ores from the upper lake regions to the Ohio ports is concerned. The totals of the sales and shipments will not be announced, however, until about December 1st. There has been a fairly good movement of ores forward to the furnaces, and it would be better but for the fact that there is still a partial car famine. The scarcity of cars has materially inconvenienced the shippers in this regard. A few cargoes still remain to be brought down from the upper lake ports, and strenuous efforts are being made to land them at the Lake Erie docks before cold weather sets in permanently. While there is practically no business in that line, the vessel owners still quote rates of 65c. per ton from Escanaba, 95c. from the head of Lake Superior, and 90 and 95c. from Marquette. Following are the prices of ore: Specular and magnetic ores, Bessemer quality, $3.25 and $3.65; specular and magnetic, non-Bessemer quality, $2.55 and $3.25; hematite ores, non-Bessemer quality, $2.10 and $2.25.

Pig Iron.—Very few tons of any kind or quality have been sold during the past week. The agents of the furnaces in this vicinity report that the transactions have invariably been small; some of them report no trade whatever. It is not expected that much business will be transacted during the remaining weeks of the year. The market values, notwithstanding the quiet condition of the market, remain unchanged, the quotations, f. o. b., Cleveland, are as follows: Lake Superior charcoal, $11.75; Bessemer, $10.75@$11; No. 1 foundry, $10.65@$10.75; No. 2, $10.25@$10.50; No. 1 Ohio Scotch, $10.75@$11; No. 2, $10.25@$10.50; gray forge, $9.50@$9.75.

Philadelphia. Nov. 25.

(From Our Special Correspondent.)

Pig Iron.—Less business than usual has been done this week. The only activity worth noting was in foundry irons. Most consumers have been carrying iron for a few weeks ahead. The finer brands have been well sold up, and the sales noticed this week were of the most desirable brands. Inquiry among the foundry men shows that nearly all may be expected to buy before long. Forge irons are being worked up fast, but the contracts, as a rule, extend over longer periods. In basic and Bessemer irons there is very little doing, so far as can be learned, but a rumor prevails that there have been two or three large transactions closed this week. The matter cannot be verified to-day. It is known that there are plenty people willing to buy on their own terms, but makers are gathering courage from the statistical position and the prospects of a broadening demand. To-day's quotations are: No. 1 X foundry, $11.75@$12.25; No. 2 X foundry, $10.75@$11.25; No. 2 plain, $10.50;

Standard mill, $10@$10.25; ordinary, $9.75; basic, $10.25; Bessemer, $12.50; low phosphorus, $16.75.

Billets.—There has been some business, but no facts are allowed to get out.

Merchant Bars.—Some small country mills have been fortunate in getting up a fair amount of winter business, and they now have more than for years at this time. The Schuylkill Valley mills are not obliged to cut prices for business, but in two or three cases it has been done this week, because the orders run over a good, long time. Common is 1.05c.; refined, 1.10@1.15c.; soft steel, 1.20c.; special steel, 1.30c.

Nails.—A good fall business has been done in nails because of the persistence with which business has been pushed. Cut nails are in large supply, and buyers count on some concessions as a result of heavy output.

Pipes and Tubes.—There are no new features to consider this week. The situation is strong.

Merchant Steel. — Correspondence had with large consumers of merchant steel is full of interest. It shows the consumption in every product is double what it was a year ago. The mills are not hearing from their Eastern agents with orders. The store stocks are going down fast, and big orders will soon be sent in.

Sheet Iron.—All sheet mill agents and representatives unite in saying that if the incoming orders were as large as the deliveries business would be remarkably satisfactory. The orders this week are for heavy sheet mostly. Prices are not shaded. So far as can be learned, consumers have not ordered far ahead this week, but storekeepers say the present dullness cannot last much longer.

Plate.—This week's business consisted mostly of orders from buyers, who have orders under execution. Most of them wanted more to round out with. The boiler makers are doing good work. There is nothing particularly new, but we hear street talk relating to foreign business, though nothing definite can be woven out of the rumors. Ordinary tank and universals are quoted at 1.30c.; flange, 1.50@1.60c. Firebox is selling well.

Structural Material.—Bridge builders are asking this week for better figures than manufacturers care to grant. They think shapes ought to "give" a little, but mill men do not regard this weakness in raw material sufficient to warrant any departure from quoted rates. Representatives who are chasing up some big business intimate that buyers may see it to their advantage not to let contracting go over the holiday season. Angles are 1.25c.; beams and channels, 1.40@1.50c.

Steel Rails.—Those who are familiar with the economic advantages of Western Pennsylvania steel makers read with some misgivings the assertions that a combination to control the production and to sell at higher prices was only a question of time. The established policy at Pittsburg has been against control that is not based on ability to undersell competitors.

Old Rails.—Old iron rails have been selling freely in come Western markets, and the fact is reflected here in stronger quotations. Agents have instructions this week to buy up at a given figure, and they are trying to obey orders.

Scrap.—Instructions are out this week to certain scrap men to buy up quantities of scrap at certain prices, and they are on the warpath for the material, but they will have to be smart to get what they are after at the prices named. The tendency in good scrap is upward.

Pittsburg. Nov. 24.

(From Our Special Correspondent.)

In this season of the year business is fully up to expectations, and much larger than is usual at this time of the year. So far as regards new business, nothing unusual has taken place in the iron and steel trades; but in the matter of developments the situation is somewhat extraordinary. The prospective demand continues beyond all precedent; the great difficulty now is how to get the stuff moved. No better illustration of changed conditions need be given than the fact that the supply of cars, locomotives and vessels is totally inadequate to meet present or prospective requirements, notwithstanding the enormous additions of such equipments made during the past year. Railway extension will probably be the next important interest to get under way, and it need be no surprise if it does not do so. The decrease in the stocks of pig iron is another important feature. Europe has not been so bare of stocks in twenty years as it is to-day, and, while the United States is producing 11,000,000 tons per annum, stocks since June have decreased 152,000 tons, an average of over a thousand tons a day. These figures are full of significance, and in all probability indicate a rising market in the not distant future.

Returns during November, December and January may be more or less favorable, as there is more or less curtailment in consumption during and around the holiday season, and there is no reason to suppose that the year will be any exception so far as that goes.

In finished material there is not much room for comment; prices are steady and unchanged; of course, there is not as much new business coming in as there was a few weeks ago; trade in that line is keeping up remarkably well when the season is taken into consideration; prices are unchanged.

Sheet Bars.—There was a moderate demand since our last; prices show a slight decline, with sales, $16.60@$16.75.

Steel Wire.—The demand has fallen off; prices unchanged.

Scrap Material and Old Rails.—There has been a good demand for Youngstown and Pittsburg delivery; prices have been well maintained.

Wrought Iron and Steel Pipe.—New business has fallen off; the mills, however, are all amply supplied with contracts, which will keep them busy for some time; prices unchanged.

Wire Nails.—Market reported dull; this, however, is generally the situation at this season of the year. No change in prices.

Ferro-manganese steady; sales of 80% imported delivered $50.

The Latest.—Business continues to move along steadily. Notwithstanding the complaint of dull times, iron and steel are selling right along, showing that consumption is doing away with production rapidly. Bessemer is firmer than last week. Pittsburg delivery sold as low as $10.10@$10.25. This week, lowest sale, $10.15@$10.30. Mill iron is steady. Pittsburg sales, $9.25@$9.30. Billets show no change; prices range $15.40@$15.60. Sheet bars are lower, with sales $16.60@$16.75. The outlook is favorable for a big trade after the holidays.

COKE SMELTED LAKE AND NATIVE ORE.

Tons.	Cash.
5,000 B., D., J., P.	$10.25
5,000 B., N., D., P.	10.20
3,000 B., all year, V	9.75
3,000 B., D., P.	10.15
2,500 B., D., J., F. M., P.	10.30
2,000 Mill Iron, J., F., P.	9.25
2,000 B., D., P.	10.15
2,000 B., N., D., P.	10.20
1,500 B., D., P.	10.25
1,000 B. prompt, P.	10.20
1,000 Mill Iron, D., J., P.	9.25
500 No. 2 F'dry, ex., P.	10.50
500 Mill Iron, del., P.	9.30
300 B., prompt, P.	10.25
200 No. 2 F'dry, P.	10.15
175 No. 2 F'dry, P.	10.15
125 No. 2 F'dry, P. ..	10.25
100 No. 2 F'dry, P.	10.20
100 No. 1 F'dry, P.	10.80
25 High Silicon, P.	10.70
25 No. 2 F'dry, P.	10.15
25 No. 2 F'dry, P.	10.00

BLOOMS, BILLETS, SLABS.

3,000 Blts., Deliv., P.	$15.45
1,500 Blts., Deliv., P.	15.35
500 Blts., Deliv., P.	15.40
200 Blts., Deliv., P.	15.50
180 Blts., Deliv., P.	15.55

SHEET BARS.

1,500 Delivered, P.	$16.75
1,200 Delivered, P.	16.60
1,000 Delivered, P.	16.50
850 Delivered, P.	16.70
500 Delivered, P.	16.65

STEEL WIRE RODS.

1,000 Delivered, p't, P.	$22.00
1,000 J. to A., P.	20.50

MUCK BAR.

500 Neutral, P.	$18.50
300 Neutral, P.	18.87½

SKELP IRON

Tons.	Cash.
500 N. Gr'd. P	$1.25 4 m.
350 Sheared, P.	1.32½ 4 m.
300 W. Gr'd, P.	1.25 4 m.

SKELP STEEL.

500 Sheared, P.	$1.12½ 4 m.
500 W. Gr'd, P.	1.00 4 m.
500 N. Gr'd, P.	1.00 4 m.

FERRO-MANGANESE.

200 80%, imp. dlv'd, P.	$50.00
50 80%, imp. dlv'd, P.	50.00

SPELTER.

100 Prime West'n, P.	$5.27
50 Prime West'n, P.	5.25

CHARCOAL.

100 Warm Blast, P.	$14.75
100 Cold Blast P.	21.50
100 War m Blast, P.	16.00
100 Warm Blast, P.	15.50
100 No. 2 F'dry. P.	14.75
50 No 3 F'dry, P.	14.95
50 No. 2 F'dry, P.	14.75

OLD IRON AND STEEL RAILS.

2,500 Iron Rails, gr., V.	$13 65
1,500 Iron Rails, gr., V.	13 75
1,000 Steel Rails, gr., P.	9.85
600 Steel Rails, gr., P.	10.00

SCRAP MATERIAL.

1,500 H. M. Stock, gr., P.	$19.00
500 Bu. Scrap, net, P.	9.00
350 Cast Scrap, gr., P.	9.00
200 No. 1 W. S., net, V.	11.50
200 Wr. T'ngs, net, P.	6.50
150 Cast G'ngs, net, V.	5.75
100 Melt Steel, gr., P.	9.50
100 Cast B ngs, net, P.	5.85
100 Wr. T'ngs, net, P.	7.50
100 Old Car W., gr., P.	10.00

New York. Nov. 25.

Conditions are little changed in the local market. The demand for most lines of manufactured iron and steel is but fair. In foreign trade we note a heavy trade in certain special lines of machinery, as typewriters and printing presses with England; recent shipments of $35,000 of machine tools to England, and orders for $15,000 worth of electrical material for the British West Indies.

Pig-iron consumption continues steady, and some of the local foundries have been replenishing stocks. Prospects for the winter are good. We quote for Northern brands tidewater delivery: No. 1 X foundry, $11.25@$11.50; No. 2 X foundry, $10.50@$11; No. 2 plain, $10.25@$10.50; gray forge, $9.75@$10.25. Southern brands, New York delivery: No. 1 foundry, $11@$11.25; No. 2 foundry, $10.50@$10.75; No. 1 soft, $10.75@$11; No. 2 soft, $10.50@$10.75; No. 3, $10.25@$10.50; basic, $10.25@$10.50.

Bar Iron and Steel.—The market is quiet and unchanged. We quote ordinary common iron bars, on dock, 1.05@1.10c.; refined, 1.15c. Soft steel bars, 1.10@1.20c.

Plates.—There is a fair demand for plates, mostly on small orders. Quotations unchanged, as follows: For sheared plates at tidewater, in large lots: Tank, ¼-in. and heavier, 1.25@1.30c.; 3.16-in., 1.35@1.40.; Nos. 8, 9 and 10, 1.45@1.50c. Shell is as high as 1.35@1.40c.; flange, 1.45@1.55c.; marine, 1.60c.; firebox, 1.65@1.70c. Universals are 1.30c.; charcoal iron plates, 2.25c. for shell, 2.75c. for flange and 3.25c. for firebox. Rivets are 2.25@2.50c. for iron, and 1.75@1.85c. for steel.

Structural Material.—There is little doing in this market to show a prospect for increased consumption soon. No large contracts reported recently. We quote for large lots at tidewater: Beams, 15-in. 1.35@1.45c.; angles, 1.25@1.30c.; tees. 1.45@1.50c.; channels, 1.40@1.50c.

Steel Rails.—As some of the shrewder buyers anticipated, the Carnegie interests decided to keep out of any hard and fast agreement with the Federal Steel Company. We quote: Standard sections, $18 f. o. b. mills, with girder rails, $22. Lighter rails are quoted: 12-lb., $24; 16-lb., $22; 20-lb., $22; 25-lb., $20; 30-lb., $20; 35-lb., $20; up to standard, $19; with the usual 10% advance for smaller orders; all f. o. b. mills. Track fastenings are quoted: Angle bars, 1.05@1.10c.; fish plates, 1.15c.; spikes, 1.40@1.50c.; bolts, 1.60@1.75c.

Nails.—There is a steady, fair demand. Quotations are for large lots on dock; cut nails, $1.30; wire nails, $1.45.

Old Material.—The market remains unchanged, with demand steady. Quotations are: Old steel rails, $8.25; old iron rails, $11; old car wheels, $10; axles, $15@$16; wrought iron scrap, $10; machinery cast, $9.50; borings, $5; turnings, $6; burnt iron, $5.25; all New York deliveries.

METAL MARKET.

NEW YORK, Nov. 25, 1898

Gold and Silver.

Gold and Silver Exports and Imports

At all United States ports, October and year from Jan. 1.

	October.		Ten Months.	
	1897.	1898.	1897.	1898.
GOLD.				
Exports	$313,311	$1,279,926	$32,998,892	$14,061,849
Imports	11,775,183	16,227,358	28,386,318	143 658,095
Excess	I. $11,462,172	I. $14,947,432	E. $4,612,574	I.$129,596,246
SILVER.				
Exports	5,225,437	4,572,827	47,832,111	34,946,327
Imports	3,283,433	2,532,797	27,164,680	24,924,164
Excess	E. $1,942,014	E. $1,980,030	E $20,667,431	E.$10,022,163

This statement includes the exports and imports at all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

Gold and Silver Exports and Imports, New York

For the week ending Nov. 25th, 1898, and for years from January 1st, 1898, 1897, 1896, 1895.

Period	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$333,294	$74,724	$695,837	$217,050	E. $737,357
1898..	7,773,023	95,784,448	30,426,941	2,942,841	I. 60,527,365
1897..	29,708,816	13,515,582	42,222,989	2,,82,134	E. 55,634,059
1896..	40,670,543	76,572,838	34,189,556	3,565,588	I. 5,278.327
1895..	61,248,184	27,517,773	35.330,193	1,510,012	E. 70,550,592

Gold exported went to the West Indies; the silver to London. The gold imported was in small lots from various places; the silver came from South America.

The United States assay office in New York reports the total receipts of silver at 177,000 oz. for the week.

Financial Notes of the Week.

General business continues on unchanged lines, with no marked features to be recorded. Probably no alteration can be looked for until after Congress meets and the treaty of peace with Spain is concluded and submitted. The great activity in the iron trade and in some other lines is balanced by the unsettled state of the textile trade. Money continues in good supply and at moderate rates. This, with the high rates of interest abroad, and the general agitation in Europe, continues to hold back imports of gold, and none have been received at New York.

Silver has been quiet with a receding tendency. Contracts for Spain having been completed, the price has receded, as other bidders have not been in sufficient force to sustain quotations.

The statement of the United States Treasury on Thursday, November 23rd, shows balances in excess of outstanding certificates as below, comparison being made with the statement for the corresponding date last week:

	Nov. 17.	Nov. 23.	Changes.
Gold	$241,088,630	$240,964,588	D $124,042
Silver	7,297,178	7,373,289	I. 76,111
Legal tenders	16,912,074	15,699,117	D. 1,212,957
Treas. notes, &c.	1,023,599	983,716	D. 39,883
Totals	$266,321,476	$265,020,707	D. $1,390,769

Treasury deposits with national banks amounted to $95,464,749, a decrease of $24,188 during the week.

The foreign merchandise trade of Great Britain for the 10 months ending October 31st is given by the Board of Trade returns as below:

	1897.	1898.
Imports	£368,681,466	£383,311,220
Exports	245,889,901	243,146,160
Excess, imports	£122,791,565	£140,165,060

The increase in imports this year was £14,-

629,754, or 4.0%, while exports showed a decrease of £2,743,741, or 1.1%; the result being an increase of £17,373,495, or 14.1%, in the excess of imports over exports.

The movement of gold and silver in Great Britain for the 10 months ending October 31st is given by the Board of Trade returns as below:

	Imports.	Exports.		Excess.
Gold:				
1898.....	£38,270,703	£30,700,088	Imp.	£7,570,615
1897.....	26,072,565	25,967,123	Imp.	105,442
Silver:				
1898.....	11,908,425	12,688,173	Exp.	779,748
1897.....	14,454,173	15,535,165	Exp.	1,080,992

The larger exports of gold this year were £10,706,362 to the United States; £8,137,273 to Germany; £3,776,700 to Japan. Of the silver imported £7,709,779, or 64.7%, came from the United States.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending November 19th gives the following totals, comparison being made with the corresponding weeks in 1897 and 1896:

	1896.	1897.	1898.
Loans and discounts..	$454,962,000	$580,170,900	$693,765,200
Deposits	476,295,300	643,117,400	786,432,900
Circulation	20,331,900	15,989,200	15,971,100
Reserve:			
Specie	76,175,400	103,650,200	159,358,600
Legal tenders	72,204,000	80,537,400	53,922,000
Total reserve.....	$148,379,400	$184,187,600	$213,275,600
Legal requirement....	119,076,325	160,779,350	196,608,225
Balance surplus.....	$29,303,075	$23,408,350	$16,667,375

Changes for the week this year were increases of $5,897,800 in loans and discounts, $9,432,900 in deposits, $182,000 in circulation, $2,947,600 in specie, $1,066,200 in legal tenders, and $1,655,575 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings of the corresponding dates last year:

	——1897.——		——1898.——	
Banks.	Gold.	Silver.	Gold.	Silver.
N. Y. Assoc.	$103,650,200	.....	$159,353,600	.....
England	159,585,165	.....	162,195,560	.....
France	392,587,521	$207,709,536	366,697,700	$244,186,000
Germany ...	138,535,000	71,300,000	123,780,000	63,770,000
Aus.-Hun. ..	189,815,000	61,840,000	176,865,000	62,295,000
Spain	46,140,000	54,600,000	55,310,000	28,885,000
Belgium	13,683,335	6,841,665	14,125,000	7,065,000
Netherlands.	13,140,000	33,305,000	21,575,000	33,155,000
Italy	78,485,000	10,610,000	74,335,000	11,440,000
Russia	573,240,000	20,190,000	483,815,000	17,665,000

The returns for the Associated Banks of New York are of date November 19th, the Banks of England and France November 17th, and the others are of date November 24th, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reprots gold only.

Shipments of silver from London to the East for the year up to November 10th are reported by Messrs. Pixley & Abell's circular as follows:

	1897.	1898.	Changes.
India	£4,981,656	£3,974,790	D. £1,007,866
China	333,671	545,447	I. 211,776
The Straits	442,807	360,641	D. 82,166
Totals	£5,758,134	£4,880,878	D. £867,256

Arrivals for the week, this year, were £247,000 in bar silver from New York, £109,000 from Chile, and £35,000 from the West Indies; total, £391,000. Shipments were £58,600 in bar silver to Bombay, and £22,822 to Hong Kong; total, £80,822.

Daily Prices of Metals in New York.

November,	Sterling Exchange	Silver. Fine oz. Cts.	Silver. London Price	Copper. Lake, cts. ₩ lb.	Copper. Electrolytic, ₩ lb.	Copper. Lond'n standard £ ₩ ton.	Tin, cts. ₩ lb.	Lead, cts. ₩ lb.	Spelter cts. ₩ lb.
19	4.85¼	60⅝	27⅛	13	12⅝	....	18	3 70	5.35
21	4.85¼	60⅝	27⅛	13	12⅝	56 10 0	18	3 70	5.35
22	4 85¼	60⅝	27⅛	13	12 60	56 2 6	17⅝	3.70	5.30
23	4.86¼	60½	27⅝	13	12 55	56 0 0	17⅝	3.67½	5.35
24	.....	.....	.....	.....	.....	56 2 6	.....	.....	.....
25	4 85	60⅜	27¾	13	12 55	56 2 6	18¼	3.65	5 35

Average Prices of Metals per lb., New York.

Month.	Copper. 1898.	Copper. 1897.	Tin. 1898.	Tin. 1897.	Lead. 1898.	Lead. 1897.	Spelter. 1898.	Spelter. 1897.
Jan	10.99	11.75	13.87	13.44	3 65	3.04	3.96	3.91
Feb.....	11 28	11.92	14 08	13.59	3 71	3.28	4.04	4.02
March...	11.98	11.80	14 38	13.43	3 72	3.41	4 25	4.12
April....	12 14	11.48	14.60	13.34	3.63	3.32	4.26	4.13
May.....	12.00	11 03	14.52	13 14	3.64	3.26	4 27	4.21
June....	11.89	11 11	15 22	13.77	3.82	3.33	4 77	4.24
July....	11.63	11 11	15 60	13 89	3.95	3.72	4 66	4.32
August..	11.89	11.16	16.23	14.80	4.00	3.84	4 58	4.26
Sept.	12.31	11.30	16.03	13 98	3.99	4.30	4.67	4.18
October..	12 41	11.13	17 42	13 88	3 78	4 00	4 98	4 17
Nov.....	12.86	10.88	18.20	13.79	3.70	3.76	5.29	4 03
Dec	...	10.78	...	13 71	.....	3.70	...	3 89
Year.....	.....	11.29	.....	13.67	.....	3.58	.....	4.12

Average Prices of Silver per oz. Troy.

Month.	1898. Lond'n Pence.	1898. N. Y. Cents.	1897. Lond'n Pence.	1897. N. Y. Cents.	1896. Lond'n Pence.	1896. N. Y Cents
January...	26.29	56.77	29.74	64.79	30.69	67.13
February..	25.89	56.07	29.68	64.67	31.01	67.67
March....	25.47	54.90	28.96	63 06	31.34	68.40
April.....	25 95	56.02	28.36	61.85	31.10	67.92
May.....	26 31	56.98	27.86	60.42	31.08	67.88
June	27.09	58.61	27.58	60.10	31.46	68.69
July.....	27.32	59.06	27.36	59.61	31.45	68 75
August....	27.48	59.54	24.93	54.09	30 93	67.34
September	28.05	60.68	25 66	55.24	30.19	65 68
October ..	27.90	60.42	26 77	57.57	29.68	65.05
November	.....	.....	26 87	57.93	29.46	64.98
December.	.....	.....	26.83	58.01	29.70	65.24
Year.....	.....	.....	27.55	59.79	30.67	67.06

The New York prices are per fine ounce; the London quotation is per standard ounce, 925 fine.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars.....	$ .47	$ .48
Peruvian soles and Chilean pesos.....	.43	.44
Victoria sovereigns.....	4.84	4.87
Twenty francs.....	3.84	3.88
Twenty marks.....	4.73	4.78
Spanish 25 pesetas.....	4.78	4.84

Other Metals.

Copper.—The market for copper remains exceedingly strong, and a fair business has been doing in lake, from first hands, at 13c. More could have been sold at that price, but the companies did not care to go on. The Calumet & Hecla Company is said to be entirely sold out up to March. Electrolytic copper has not yet gone up proportionately, and we have to quote for cakes, wirebars and ingots, 12.55@12.60c., and cathodes, 12.40@12.45c. Casting copper is nominal at 12⅜@12½c., but there is hardly anything offered. Exports continue very large.

In London the market for the speculative brands has been somewhat irregular, and there is a premium for spot against three months copper, due to the scarcity in spot. We have, on repeated occasions, pointed out that the visible supplies in England and on the continent have come down to a lower level than known during the last 20 years or more. Prices varied from day to day, and close firm at £56 2s. 6d.@£56 5s. for spot and £56@£56 2s. 6d. for three months prompt, which is about 7s. 6d. lower than eight days ago. Large transactions are reported as having taken place from day to day. For refined and manufactured brands a very good demand has existed, and a large business has been done at very firm rates. We quote: English tough, £58 5s.@£58 15s.; best selected, £59 10s.@£60; strong sheets, £67; India sheets, £63 10s.; yellow metal, 5¾d.

Imports of copper into Great Britain for the 10 months ending October 31st were 73,946 tons ore (71,173 tons in 1897); 64,667 tons matte and precipitate (75,939 tons in 1897); 56,141 tons fine copper (51,270 tons in 1897). Of the imports this year 1,001 tons ore, 9,057 tons matte and 31,578 tons fine copper came from the United States. The imports this year were equivalent to 95,870 tons fine copper, against 96,360 tons last year.

Tin.—At the somewhat lower prices established this week, there was a very large consumptive demand, and manufacturers have bought quite freely both for immediate and forward delivery. We have to quote 18⅛c.

The London market has fluctuated rather largely. The opening price this week was £81, 5s. lower than last week; after this a further decline set in down to £80 7s. 6d., and on the 24th £81 was paid, with a firm tendency. To-day there was quite a rush to purchase, and prices rapidly jumped up to £83@£83 2s. 6d. spot and £83 10s.@£83 12s. 6d. three months prompt.

Shipments from the East continue quite heavy, but it is reported that, in spite of the higher prices established, a heavy increase in the production is not likely during the next few months, owing to the scarcity of labor.

Imports of tin into Great Britain for the 10 months ending October 31st were: From the Straits, 13,005 long tons; Australasia, 1,743; other countries, 1,933; total, 16,681 tons, against 22,022 tons in 1897; a decrease of 5,341 tons, or 14.3%, this year.

Lead.—There has not been much doing this week, as buyers have been holding back somewhat, awaiting further developments, in consequence of the rather easy tendency prevailing. We have to quote 3.65@3.67½c. New York, and business has been reported in St. Louis at 3.52½@3.55c.

The foreign market is barely steady at £13 7s. 6d.@£13 8s. 9d. for Spanish, with English lead 5s. higher.

Imports of lead into Great Britain for the 10 months ending October 31st were 153,392 long tons, against 136,128 tons in 1897; an increase of 17,264 tons, or 12.7%. The imports this year were: From Spain, 81,032 tons; Australasia, 32,577; United States, 25,200; other countries, 14,583 tons. The increase this year was almost entirely from Australasia.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is dull, demand being very light. We quote common metal, 3.52½c., and refined lead, 3.55c.

Spelter.—A somewhat easier tendency prevailed the earlier part of the week, due to the decline in London, and business has been done at slightly lower rates, 5.15c. St. Louis and 5.30@5.35c. New York; but the market closed firmer. The consumptive demand remains very good, especially when considering the late season of the year.

The foreign market fluctuated widely. In the earlier part of the week good ordinaries in London were selling at £24 2s. 6d., but later on sales for immediate delivery were reported at £24 12s. 6d.

Imports of zinc into Great Britain for the 10 months ending October 31st were 63,939 long tons, against 57,820 tons in 1897; an increase of 6,119 tons, or 10.0% this year.

Antimony is without any change: Cookson's, 9¼c.; U. S. Star, Hallett's and Japanese, 8¾@8⅞c.

Nickel continues on unchanged lines, and no alteration in prices can be reported. We quote for ton lots 336@36c. per lb., and for smaller orders 35½@38c. London prices are 14@16c. per lb., according to size and order.

Platinum.—Demand is steady. The metal can be had in large lots at $14.40; for smaller orders it is quoted at $15@$16 per oz. in New York. The London quotation is 58@60s. per oz. Prices are firm.

For chemical ware (crucibles and dishes), best hammered metal, current prices in New York are as follows:: In lots of 250 grams or more, 56c. per gram; in lots of 100 grams, 58c. per gram; less than 100 grams, 60c. per gram; unmanufactured platinum will be supplied in small quantities at 2c. less per gram.

Quicksilver.—The New York quotation remains $41 per flask. The London price is £7 10s. a flask, with £7 9s. named from second hands.

Imports of quicksilver into Great Britain for the ten months ending October 31st were 4,023,491 lbs. (4,017,303 lbs. in 1897); exports were 1,887,951 lbs. (1,755,491 lbs. in 1897), leaving 2,135,550 lbs. this year consumed or added to stocks.

The Minor Metals.—Quotations are given below for New York delivery:

Aluminum.	Per lb.		Per lb.
No. 1, 98% ingots..	30@34c.	Bismuth	$1.40
No. 2, 90% ingots..	30@34c.	Phosphorus	45@65c.
Boiled sheets	38c. up	Tungsten	70c.
Nickel alloy.....	33@39c.	Ferro-tungsten, 60%	60c.

Variations in price depend chiefly on the size of the order.

MINING STOCKS.

Complete quotations will be found on pages 656, 657 and 658 of mining stocks listed and dealt in at:

Baltimore.	New York	Mexico.
Boston.	Philadelphia.	Paris.
Cleveland.	Pittsburg.	Rossland.
Colo. Springs.	St. Louis.	Shanghai.
Denver.	Salt Lake.	Toronto.
Helena.	San Francisco.	Valparaiso.
	London.	

New York. Nov. 25.

Speculation in mining stocks here has been quiet. A week with a holiday in it is usually a dull one, and this has been no exception to the rule. Our Boston friends are going wild over their copper stocks, but we do not disturb ourselves much in that direction.

The Comstock deep level talk has helped the stocks a little, but has hardly increased the disposition to deal in them. Consolidated California & Virginia sold this week at $1.25@$1.35.

The Utah stocks were quiet, only a few sales of Horn Silver being reported, and one or two of Ontario. The Salt Lake Exchange is a lively one just now, but very few of the stocks dealt in there are listed in New York.

A little trading was done in the Colorado shares. On the mining exchange there are a lot of Cripple Creek prospects dealt in at prices less than 1c. a share, which is a great pity, as it helps to spoil the credit of good mines. The Exchange would benefit itself by dropping these prospects altogether.

Boston. Nov. 24.

(From Our Special Correspondent.)

The market has been quieter this week and a little weaker; partly because of a disposition to sell and realize profits, and partly because of the dullness preceding a holiday. Thanksgiving is especially a New England day, and a good many brokers and active traders are off for a day or two, and have done little all the week. A slight reaction affected all the stocks, but with prospects of recovery next week. Friday and Saturday will show very little business, unless something now unexpected should happen.

As for some weeks past, the purely speculative stocks were most active. Boston & Montana sold up to $239, closing at $238. Butte & Boston was quoted at $56, and closed at that price. Old Dominion brought $35, dropping later to $34¼. Centennial was run up $3 on a report that the

company has struck the Kearsarge lode, and sold at $27, but dropped later to $25¾. Franklin has been about $18½, closing at $18.

The low-priced stocks were bought rather heavily, and held prices pretty well. Arnold sold at $16½; Allouez, $5½; Tecumseh, $5¼; Humbolt, $4½; Ashbed, $2; Washington, $1½. No one takes these stocks very seriously, but there are some people who find them convenient to speculate in.

The new ventures are all selling well and attract a good deal of attention. Arcadian touched $39, Isle Royal $30 and Baltic $26. A new company, which will probably meet with favor, is the Mohawk, which owns a property on the extension of the Kearsarge lode. It has been thoroughly prospected, I understand, and has the advantage of Stanton—which means honest—management.

The investment stocks maintain their high level. Calumet & Hecla sold up to the unprecedented quotation of $650, going off later to $637½. Tamarack was $178@$180; this company has declared a dividend of $4, making $8 for the year, against $6 in 1897. Quincy is $143; Osceola, $78½; Atlantic, $34½; Wolverine, $33. I am informed that Wolverine is earning about $17,000 a month.

The letter of your correspondent "Q. E. D.," in Saturday's "Engineering and Mining Journal," called out a good deal of comment; but warnings do not have much effect on a booming market. Some of his plain talk was fully appreciated, however.

Nothing was done in the quicksilver stocks. In gold stocks there was a moderate business, but at fluctuating prices. Santa Ysabel was rather strong, selling up from $6½ to $7½. There were a few sales of Victor at $6@$6½. One sale of Merced was reported at $5¼ yesterday. Pioneer brought $5 for a few shares. Gold Coins sold at 90c., but later only 50c. was bid, while Boston & Cripple Creek was quoted 30@35c.

Dominion Coal common stock, after selling up to $34½, went off a little at the close, in sympathy with the general list, selling at $33¾. Federal Steel broke in sympathy with the New York market.

The general prospect is for continued activity, especially as money continues abundant at 2@2½% for call loans, and 3% for time. Our banks must be pretty well loaded with copper stocks, but do not seem to mind it.

Salt Lake City. Nov. 19.

(From Our Special Correspondent.)

Apparently the Utah mining share atmosphere is highly charged with ozone. The bulls are having high carnival, and brokers are working day and night. A fortnight ago I said that local buyers had their wants about supplied, and predicted a quieter market, with probably slightly lower prices, "unless there are more Eastern buyers, or something sensational occurs at the mines." Both these conditions have come true; there have been important ore uncoverings, and Eastern orders have largely increased. Of course, in a booming period some shares of small worth are bound to be boosted, and alert manipulators have realized profits, but most of the present advances are backed by merit, at least in part. A reaction must follow.

Northern Light did a 75,000-share business. Since the delinquent assessment sale it has been hawked around at 7½@10c., but Thursday it suddenly doubled, and continued to jump, selling at 43c. yesterday, closing this morning at 31⅞c. bid, 32¼c. asked. The cause of this is a rich ore strike, the extent of which is not yet known. Little Pittsburg sold readily at 4@5c., the advance due to its being a neighbor to Northern Light. The forthcoming assessment, it is said, will be ½c. per share, in lieu of 5c., as before intimated. Chloride Point is firm, with little doing. Water shortage still curtails the tonnage treated by the mill, which, the management says, will soon be remedied. Mercur is quoted $7.05 bid, $7.22½ asked, and off-board sales below the bid are reported. The regular $25,000 dividend will be paid on Monday. Sacramento recoiled a little from the spurt, on the report of a change of control. Indications are that this transfer will be made. Peyser Marion lacks interest. Sunshine is stronger. Daisy remains firm.

Swansea is on the top wave of the boom, selling up to $3.75. The rumor was circulated that dividends are to be increased to 10c., a move, the management assures me, which is not contemplated. Lower Mammoth recovered. Mammoth maintains its record of being contrary, and has dropped back. Four Aces is being boomed. Tetro did business at 5¼@6¼c., closing 6c. bid, 6½c. asked. Eagle & Blue Bell is quietly inquired for. South Swansea is higher. Ajax is in demand. Star Consolidated is a new Tintic stock that has suddenly come into favor. Grand Central is in high favor, and there are several outside orders. It closed $7.25 bid, $7.50 asked.

Ontario sold at $6.50. Valeo did business up to $1.72, and later lost a part of the advance, closing $1.45 bid, $1.50 asked. Those who bought from 50c. to 75c. a few weeks ago have taken profits. Galena maintains the higher quotations, due to the new ore find. Utah is very strong. Horn Silver is inert. Dexter made another bound, doing business above $3.50, on report of an Eastern option for the control, at $4. This is denied by the management. Several other shares were largely traded in, but they are mostly held locally. Red Wing, of Bingham, is attracting attention. I am told that these shares are being purchased by Eastern people.

San Francisco. Nov. 19.

(From Our Special Correspondent.)

There have been some fluctuations in the Comstocks this week, and a little more business. Trading, however, is still within narrow limits, and the predicted outside orders do not show up to any extent. The public still refuses to be excited over the prospects of deep mining. Sales are larger than they were last month, but the amounts are far from being satisfactory to brokers.

Some quotations noted are: Consolidated California & Virginia, $1.20@$1.25; Hale & Norcross, $1.10@$1.15; Sierra Nevada, 78@80c.; Ophir, 66@68c.; Best & Belcher, 25c.; Chollar, 23c.; Gould & Curry, 17@18c. For Standard Consolidated $1.80 was bid, with no sales.

The sworn returns filed in the offices of the mining companies here show cash on hand November 1st as below: Alpha, $673; Alta, $46, with $1,000 due bank; Andes, $1,362; Best & Belcher, $805; Caledonia, $6,424, with October expenses unpaid; Consolidated California & Virginia, $28,056, with $318 in unsold bullion; Confidence, $792, with October bills unpaid; Consolidated Imperial, $854; Consolidated New York, $185; Challenge Consolidated, $1,200; Crown Point, $544, with October bills unpaid; Exchequer, $259; Gould & Curry, $1,836; Hale & Norcross (Fox board), $3,531; Julia Consolidated, $475; Justice, $313; Ophir, $7,151; Potosi, $3,274; Savage, $2,263; Sierra Nevada, $13,954; Scorpion, $42; Silver Hill, $232, with $1,150 due bank; Syndicate, $1,329; Standard Consolidated, $83,288; Union Consolidated, $2,570; Utah Consolidated, $2,267.

The following companies report indebtedness on November 1st: Belcher, $3,611, with October expenses unpaid; Chollar, $1,016; Overman, $1,286; Segregated Belcher, $1,500; Silver King, $1,527.

The reports of the Comstock superintendents, as to the condition of the mines in the deep levels before they were closed, have been published in pamphlet form. While they contain little that was not known before, the pamphlet is convenient for reference.

It is announced that the treasurer of the Comstock Pumping Association has received about $38,000 out of the $50,000 called for from the companies in the association. Others will pay up as the assessments are collected. These collections, by the way, are said to be quite good.

There is a report that negotiations for a compromise between the Fox and Grayson boards of the Hale & Norcross Company are in progress, but it is impossible to-day to get any confirmation of the rumor.

The annual meeting of the San Andreas Mining Company, of Calaveras County, is called for November 28th.

London. Nov. 16.

(From Our Special Correspondent.)

People are as disinclined as ever to do any business on the mining section of the Stock Exchange. Things are very quiet, and no one appears to be contemplating new issues. The Rand output for October was another record, amounting to 400,791 oz., while other parts of the Transvaal returned 22,426 oz., but there was no particular mine which accounted for this increase. The return for November will in all probability be lower, for I hear that several mines are at present seriously short of water; in fact, some are not able to run their mills at all. Unless the rains come along soon, the drought will make considerable impression on the output.

The West Australian market has been particularly dull, and an adverse factor was introduced by the persistent circulation of reports that the Lake View Company would not be able to pay any further dividend for the year ended August 31st. Judging by the excellent returns from the mine, such reports do not appear likely, but many people have been frightened into selling their shares. Whether or not this is only a bear action I am unable to ascertain, as no reliable independent information is obtainable.

Mount Lyells are suffering from the circulation of sinister rumors, but on this point I am able to give the real state of affairs. During the past six months the whole of the exploratory work has yielded poor results, none of the ore opened up being payable. The effects of this will not be apparent on the dividends just yet, and in the meantime it is possible to hope for more promising developments. The announcement as to the results for the half year ended September 30th last is expected daily, and it is generally expected that the profit will be about £80,000. There are no buyers for the shares, which stand at £6½, the low level to which they sunk a few months ago.

I have often mentioned in these columns the London & Globe Finance Corporation and the British America Corporation, which are run by Whitaker Wright. At the present time we hear nothing whatever about them, but it is not at all improbable that during the winter we may hear that the British America Corporation is in want of further working capital. Purchases have been made most prodigally, and large sums spent in developments. In addition the Le Roi deadlock has cost a great deal, and the returns from this holding will not come to hand so early as was expected. There is no more capital to issue, so it is probable that new capital will be created instead of a reconstruction and assessment being resorted to. In the case of the London & Globe a couple of months ago a dividend was announced, and immediately afterwards the remainder of the capital was issued. By this means the corporation got its dividend back and more cash into the bargain.

A Klondyke prospectus of a particularly disreputable type is being privately circulated, but it rejoices in the "lucus a non lucendo" name of the Colorado Gold Fields Syndicate, Limited. Some months ago I casually referred to this venture in these columns, and supposed that it would die a speedy death. I was therefore surprised to get another prospectus offering the balance of unallotted shares. There appear to be 100,000 ordinary shares of 5s. each, and 5,000 deferred shares of the same value, but how many are being offered now, or what was done with the money raised by the previous issue, is not told us. A Mr. H. Carter, "of London and Denver," is managing director, and appears to be in Canada at present. What he is doing is not told us. The prospectus is very lengthy, and is full of red head lines and black underlining. The information given has nothing to do with the company. There may be people foolish enough to buy the shares, but I hope not.

Paris. Nov. 13.

(From Our Special Correspondent.)

The mining stock market is still limited by the disturbed condition of political affairs, and its fluctuations have been within rather narrow limits. In general prices have been stronger than might have been expected under the conditions, and there are very few shares which have given way. The greatest weakness apparent has been in the Russian metallurgical group.

The copper shares continue strong, because of the high prices of the metal, which continue to rise. The very low stocks of the metal and the great demand for it combine to keep up the quotation. Even war, should it arrive, will help this, since the demand for war material and ships will increase the consumption.

The consumption of zinc for galvanizing, for brass and for other purposes, continues very large, and the prices are high; hence firmness in the shares of the zinc companies.

The little interest which was lately aroused in the shares of the nitrate companies has subsided, since it appears that there is very small hope of arranging a new combination on a satisfactory basis.

Le Nickel shares have again advanced, and there is a good demand for them. It is announced that at the approaching meeting the stockholders will be asked to increase the capital stock from 6,360,000 fr. to 10,000,000 fr. by the issue of 14,560 shares of 250 fr. each. The proceeds of the new shares will be used to retire the 5% and 6% obligations of the company.

The shares of the Gafsa Prosphate Company are bringing a high price. The prospects of the company are considered good, and phosphates are now in demand at a much improved price. The production of the Gafsa mines will be about 100,000 tons this year; but in 1899, it is expected, it will reach 200,000, and in 1900 it will be 300,000 tons.

I have heretofore sent you a statement of the production of coal in France for the first half of the year. The following completed statement shows not only the production, but also the consumption, in metric tons. Coke is included in the imports and exports, and the comparison is with the first half of 1897:

	1897.	1898.
Production	14,727,291	15,480,544
Imports	4,882,213	3,705,930
Totals	19,609,504	19,186,474
Exports	542,560	676,550
Consumption	19,066,944	18,509,924

This is a reduction of 557,020 tons, or 2.9%, in the consumption. The imports this year included 3,021,650 tons of coal and 684,280 tons of coke, against 4,118,080 and 764,133 tons in 1897. The exports were 644,470 tons of coal and 32,080 tons of coke, against 516,030 and 26,530 tons last year.

The market for the South African gold stocks has been extremely quiet; in fact, these shares are almost entirely neglected for the time. This is partly in sympathy with the London market, but more because of political uneasiness.

We are still in a much disturbed condition, both as to home and foreign affairs; and the result is not easy to foresee. Azote.

STOCK QUOTATIONS.

NEW YORK.†

Name of Company.	Location.	Par val.	Nov. 19. H.	Nov. 19. L.	Nov. 21. H.	Nov. 21. L.	Nov. 22. H.	Nov. 22. L.	Nov. 23. H.	Nov. 23. L.	¶Nov. 24. H.	¶Nov. 24. L.	Nov. 25. H.	Nov. 25. L.	Sales
Adams Con.	Colo.	$10	...	.05	...	.09	.05	..	.05	.08	...	...	...	...	2,000
Atlanta	"	1	...	.05	...	...	.05	...	.05	...	...	...	...	...	100
Alice	Mont.	25	1 05	1 00	1 05	1 00	1 10	...	1 05	...	...	...	...	...	1,600
American Flag	Colo.	1	...	.04	07⅝	07⅛	.05	...	.04	...	...	...	.0086	.008	14,000
American Gold	"	...	...	...	...	...	.00⅝	...	.0082	.0082	...	...	...	...	32,000
Anaconda Gold	"	5	...	...	...	...	.55	...	...	...	...	...	...	...	.....
Argentum-Jun.	"	2	.21	...	...	...	...	...	...	...	...	...	...	...	.....
Best & Belcher	Nev.	2	.42	...	.40	...	.45	.43	.37	.35	...	...	...	...	1,400
Belcher	"	2	...	...	.20	...	.20	...	.20	...	...	...	...	...	.....
Breece	Colo.	25	.90	...	...	...	.90	8	.90	.85	...	...	...	...	.....
Brunswick	Cal.	1	...	...	.13	.10	.13	.12	.13	.12	...	...	...	...	.....
Caledonia	S. D.	...	.50	...	...	...	...	...	...	...	...	...	...	...	.....
Cannon Ball	Colo	1	0.56	.0057	...	...	0.05	...	.004	...	...	...	.006	.004	2,000
Chollar	Nev.	2	.23	.17	...	...	.20	...	.20	...	...	...	...	...	.....
Carycslite	Colo.	50	.14	.12	.13	.12	.4	.12	.14	.12	...	...	...	...	1,400
Consol'k T .b'ds	Nev.	100	.04	...	.04	...	.04	...	.04	...	...	...	...	...	500
do. stocks	"	100	.04	...	.04	...	.04	...	.04	...	...	...	...	...	.....
do. scrip	"	100	.05	...	.04	...	.04	...	.04	...	...	...	...	...	.....
Con. Cal. & Va.	"	2½	1.50	...	1 35	...	1 25	1 20	1 25	...	...	...	...	...	200
Con Imp	"	...	...	...	...	...	.02	...	.02	...	...	...	...	...	500
Copper Rock.	Colo.	1	0.⅜	...	00⅜	...	1.005	...	0.6	...	...	...	001	.00⅜	8,000
Cr & Cr. Creek	"	1	.04	...	.04	...	.04	...	.05	...	...	...	...	...	.....
Crescent	"	10	.05	...	.05	...	.05	...	.05	...	...	...	...	...	.....
Cripple Cr. Con.	"	1	.09	...	.09	...	.08	...	...	...	...	...	...	...	1,500
Crown Point	Nev.	3	.15	...	...	...	.20	...	.20	...	...	...	...	...	.....
Deadw'd Terra	S. Dak	25	.45	.35	.45	.40	.45	.40	.45	.40	...	...	...	...	.....
Elkton Con	Colo.	1	...	...	98	...	.97	...	98	...	...	...	...	...	.....
Enterprise	"	1	.35	...	40	...	.5	...	35	...	...	...	1 00	98	.....
Fath r de Smet	S. Dak	100	16	10	14	...	16	...	16	.10	...	...	...	...	200
Garfield Con.	Colo	1	...	...	12⅜	...	12⅜	...	12⅜	...	...	...	14	12⅜	600
Golden Fleece	"	1	.25	...	24	...	25	...	35	...	...	...	...	...	.....
Gold & Globe	"	1	...	...	...	...	.02	...	...	...	...	...	...	...	2.00
Gold Magnet	"	1	0016	...	.0025	.002	.0026	...	005	0.23	...	...	...	...	.....
Good Samarit'n	"	1	.0074	.0072	.0075	.0072	.0072	...	.0075	...	...	...	...	...	63,000
Gould & Curry	Nev.	3	17	...	...	...	.20	...	2	...	...	...	01⅜	.008	14,000
Hale&Norcross	"	100	1.00	90	...	...	1 00	...	1 05	.90	...	...	...	...	.....
Homestake	S. Dak	100	50 00	.....	...	...	50 00	...	50 00	...	...	...	...	...	.....
Horn Silver	Utah.	25	1 15	...	1 7	1.15	1.15	...	1 15	...	...	...	...	...	.....
Iron Silver	Colo.	20	75	...	.75	...	.75	.70	.74	75	...	...	...	...	1,500
Isabella	"	1	.26	...	.30	...	26⅜	...	.28⅜	...	...	...	.30	26⅜	200
Japan	"	10	2 50	...	2 50	...	2 50	...	2 50	...	...	...	5 00	2 50	.....
Jefferson	Colo.	1	.06⅜	...	.06⅜	...	.06	...	.06	...	...	...	08⅜	.06	5.0
Julia Con.	Nev	1	...	...	...	...	...	...	...	...	...	...	.02⅜	.02⅜	0.200
Justine	Colo.	1	02⅜	...	.03⅜	...	.03⅜	.02⅜	03⅜	02⅜	...	...	...	...	.....
King & Pemb.	Ont.	10	.14	...	16	.14	16	12	.15	.12	...	...	...	...	.....
Lacrosse	Colo.	10	14	...	09	...	.14	09	14	.09	...	...	...	...	.....
Lagonda	"	1	...	...	...	...	...	...	...	...	...	...	...	...	.....
Leadville Con.	"	1	09	...	...	...	.09	08	09	...	...	...	...	...	1,000
Lillie	"	1	...	...	...	...	...	...	...	...	...	...	...	...	.....
Little Chief	"	50	20	18	20	17	2	18	.20	18	...	...	...	...	.....
Mexican	Nev.	3	20	18	27	...	26	25	25	24	...	...	...	...	.....
Mollie Gibson	Colo.	5	.20	...	.18	...	.23	...	...	...	...	...	.22	.20	4 0
Mt. Rosa	"	1	.17	...	.18	...	.19	...	.20	...	...	...	.19⅜	19	1,900
Occidental	Nev.	3	40	...	...	...	.40	...	.55	...	...	...	...	...	.....
Old Gold	Colo.	1	.0062	.0055	.0057	.0055	0.4	...	.004	0 3	...	...	.006	003	20,0 0
Ontario	Utah	100	3 50	...	4 00	...	5 00	...	...	...	...	...	...	...	5
Ophir	Nev.	3	70	...	70	...	.80	.6.	.70	...	...	...	...	...	1,300
Pharmacist	Colo	1	03	...	03	...	.04	...	.05	...	...	...	...	...	.....
Phenix	Ariz.	1	14	.13	14	11	14	.11	...	...	...	...	...	...	.....
Pilgrim	Colo.	1	0035	003	0.3	.0035	.0035	.0032	.0032	...	...	...	0035	.0032	53,000
Plymouth Con.	Cal.	10	0	.18	10	08	10	...	1	.12	...	...	...	...	.....
Portland	Colo.	1	1.4	1.35	1 4	1 35	1 35	...	1 40	...	...	...	1.50	1 40	100
Potosi	Nev.	3	.15	...	18	...	.2	15	5	...	...	...	...	...	3.0
Quicksilver	Cal.	100	.50	...	1 50	...	1 5	...	1.7	...	...	...	...	...	.....
do. pref.	"	100	...	...	4 50	...	3 75	...	5 50	...	...	...	...	...	.....
Rocky Min.	Colo.	1	03⅜	03⅛	0.⅜	03⅜	.03	...	04⅛	02⅜	...	...	03⅜	.03	11,900
St. F. Cariboo	B.Col.	1	2.50	...	2 5	...	2.50	...	2 50	...	...	...	3 00	2.50	.....
Savage	Nev.	2½	.50	...	...	...	.48	20	.2.	...	...	...	...	...	.....
Sentinel	Colo.	1	.0035	.0033	0027	...	0 27	...	0025	...	...	...	.0035	.0026	47,000
Sierra Nevada	Nev.	5	90	.50	1 05	...	1. 0	1 00	1 00	...	...	...	...	...	.....
Small Hopes	Colo.	20	1.10	...	1 3.	...	1 30	...	1.3.	...	...	...	...	...	800
Standard Con.	Cal.	100	1.85	1.75	1.85	...	1.85	1 80	1 85	1.75	...	...	...	...	.....
Syndicate	"	100	...	...	...	...	...	...	...	...	...	...	...	...	.....
Union	Colo.	1	20	...	.13	...	18	...	.18	...	...	...	...	...	.....
Union Con.	Nev.	2½	23	...	25	...	.30	...	3.	...	...	...	...	...	1,000
Utah Con.	"	3	17	...	...	...	15	10	10	...	...	...	...	...	1,000
Waldorf	Colo.	1	.03¼	...	.03	.013⅛	01⅜	...	02⅜	.01½	...	...	.03⅛	.01⅜	7,400
Work	"	1	.14	.11	13⅝	.11	.12	...	12⅜	.12	...	...	15	.12⅜	.....
Yellow Jacket	Nev.	3	.19	...	.24	...	24	...	20	...	...	...	...	...	1,000

COAL AND INDUSTRIAL STOCKS.

American Coal	Md.	$25	140	2 0	14 0	12 0	140	3 0	140	120	...	...	92	...	.....
Central of N. J	N. J	100	...	...	88	...	89⅜	...	99⅜	89¼	...	...	...	...	6,250
Col. C. & I. Dev	Colo.	100	1⅜	⅜	1⅝	⅝	1⅜	¾	1⅝	¾	...	...	...	...	.....
Col. Fuel & I.	"	100	23⅜	...	22⅜	2.⅜	24	22 0	22⅜	...	...	...	...	...	750
Col. & H C.&I	Ohio.	100	5⅝	4	...	5	...	...	5⅝	...	...	...	...	...	10
Con Coal	Md.	100	...	50	...	47	...	47	...	47	...	...	...	...	.....
*Del. & Hud.	"	100	96	94⅜	96⅜	93	97	94⅜	93⅝	96¾	...	...	99	...	21,361
Ed'n E.I or N.Y	N. Y	100	151	...	150	...	143⅝	...	143⅝	51	...	...	151	...	1.2 5
*Federal Steel	"	100	31⅜	30⅛	32	30⅜	31⅝	3.⅜	31⅜	3 6⅜	...	...	3 3⅜	...	35,258
" " pf	"	100	74⅜	71⅜	76¼	74⅜	75⅜	73⅜	75⅜	73⅝	...	...	75	...	52,958
Illinois Steel	Ill.	100	...	...	...	...	...	...	...	...	...	...	...	...	.....
Maryland C.pf	Md.	100	52	47	52	47	52	47	52	47	...	...	...	...	.....
Minnesota Ir.	Minn	100	...	...	...	...	...	...	...	...	...	...	...	...	.....
National Lead	"	100	34⅜	...	35⅜	...	35	...	34⅝	34⅜	...	...	34⅜	....	1,935
New Central C	Md.	100	45	35	42	37	42	37	42	37	...	...	...	...	.....
N. Y., Ont. & W.	N. Y.	100	15⅜	...	15⅜	15⅜	15½	...	16⅜	15⅜	...	...	15⅜	....	16,468
Penns'lv'nia C.	Pa.	100	...	3.5	...	325	...	320	...	325	...	...	...	...	.....
Phila. & Read	"	100	16½	16⅜	16⅝	16¼	16⅞	16⅛	17⅝	16⅜	...	...	83⅜	...	23,120
" " 1st pf.	"	100	41	39⅜	4.⅜	40	4 3⅜	40	44⅜	41⅜	...	...	44⅜	....	57,299
†Standard Oil	"	100	4 1	40	41	4 0	411	41 0	411	410	...	...	...	...	.....
Tenn.C..I.&R.R.	Ala	100	30	2.⅜	3 3⅛	31	3.⅜	31	3 3⅜	31	...	...	3 3⅛	....	8 59

†Official quotations of New York Stock, Consolidated Stock and Petroleum and Minin Exchanges. Total sales. Mining, 3,1,8 0; other stocks, 27,,33 shares. *When issued. ‡Ex-dividend. ¶Holiday

PHILADELPHIA, PA.‡

Name of Company	L'cation.	Par Val.	Nov. 18. H.	Nov. 18. L.	Nov. 19. H.	Nov. 19. L.	Nov. 21. H.	Nov. 21. L.	Nov. 22. H.	Nov. 22. L.	Nov 23. H.	Nov 23. L.	*Nov. 24. H.	*Nov. 24. L.	Sales
Cambria Iron	Pa.	$50	54 75	....	39 2.	39 13	40 00	39 0	40 00	39 75	40 00	39.75	....	....	2,349
Choctaw. pref.	I. T.	50	4 0	....	....	....	43 75	39.5	41.85	41.0	....	....	....	....	815
Lehigh Nav.	Pa.	50	35 00	....	....	....	....	....	35 00	....	....	....	....	....	124
" Val.	"	50	18.63	....	18 75	18 50	18 5	18 00	18 00	17 88	18 88	18 00	....	....	2,095
Penna. R. R.	"	50	58 88	58 63	58 88	58.7.	59.63	58 75	59 7	59 38	59 63	59.35	....	....	3,359
Penna. Salt.	"	100	....	....	164	....	11 0	....	1.0	112	....	12	....	....	.....
" Steel	"	100	....	....	....	19 50	9 00	18 5	....	8.0	18.50	8 00	....	....	592
" " pref	"	100	....	....	....	....	....	....	....	....	....	....	....	....	.....
United Gas I.	"	50	130⅛	....	129	....	130	119⅜	119⅜	119⅜	119⅜	119	....	....	3,157
Welsb. of Can.	Can.	5	1 75	....	....	....	2.0	....	....	....	....	....	....	....	1 0
Welsb. Coal	"	100	10 00	....	....	....	....	....	....	....	....	....	....	....	65
" Pref.	"	10	51 50	50 25	....	....	....	....	....	....	51 50	....	....	....	111
" Light	"	100	33 50	30 25	33 00	31.00	33 75	3. 50	33 0.	3 75	33 00	31 75	....	....	5,045
West. Coal	Pa.	50	....	49 0	....	49 00	....	49.00	....	49 00	....	49 00	....	....	.....

†Official quotations Philadelphia Stock Exchange. Total shares sold, 17,834. ‡Ex-dividend. *Holiday

PITTSBURQ, PA. Nov 23.

Name of Company.	Location.	Par val	Bid.	Ask.	Name of Company.	Location.	Par val	Bid.	Ask.
Allegheny	Pa.	$100	.....	.....	N.Y. & C. Gas	Pa.	$50	.....	.....
Carborundum	"	100	.....	.....	Peoples' Natural Gas	"	50	.....	.....
Chartiers Valley	"	100	.....	27	Peoples' Pipeage	"	25	17½	.....
Enterprise Mining	Colo.	5	.....	.....	Pennsylvania Gas	"	50	10⅜	.....
Lustre Mining	Mex.	10	.....	10⅜	Philadelphia Gas	"	50	36⅜	36¾
Mansfield Coal	Pa.	50	.....	.....	silverton Mining	Colo.	10	.....	.....
Manufact Gas	"	50	.....	.....	Wheeling Gas	W.V.	50	.....	.....

BOSTON, MASS.†

Name of Company.	Par val.	No. of shares	Nov. 18. H.	Nov. 18. L.	Nov. 19. H.	Nov. 19. L.	Nov. 21. H.	Nov. 21. L.	Nov. 22. H.	Nov. 22. L.	Nov. 23. H.	Nov. 23. L.	*Nov. 24. H.	*Nov. 24. L.	Sales
Allouez, c	$25	90 0 0	5 6	5.00	5 75	5 0	6 00	5 50	5 75	5 25	5.5	5 25	...	...	9 0 1
Arcadian	25	100,000	38 25	36 00	38 5	36 75	32 5	33 13	39 75	38 63	40.00	38 50	...	...	15,6 3
Arnold, c	25	40,000	18 00	17.5	17 75	17 25	17 38	6 25	17 00	16.5	6 7	14 25	...	....	14,6 5
Ash Bed, c	25	40,000	...	...	...	...	8 00	2 2.	2 50	...	2 75	2 50	...	..	2 5
Atlantic, c	25	40,000	33 0	32 50	32.50	32 25	31.00	32 00	35 50	33 0 0	31 00	...	...	...	2,741
Baltic, c	25	100,000	26.75	25.13	25 75	25 00	26 50	25 0	27 00	26 00	26 50	26 0	...	...	0,1 8
Batopilas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.....
Bonanza, g	10	300,000	85	...	...	...	...	...	...	90	90	85	...	...	5 0
Boston Con. g c	...	...	...	...	...	...	...	...	...	...	...	...	...	...	.....
Boston & C C. g	2	200,000	32⅛	.27⅛	.35	.27⅛	35	31	32⅛	30	32⅛	30	...	...	17,30
Bost. & Mont, gsc	25	150,000	239⅜	233	240	239	239⅛	238	239	238	239	237	...	...	2,539
Breece, i	25	200,000	...	...	...	...	...	...	...	...	...	...	...	...	.....
Butte & Bost., c	10	200,000	57 00	54 75	56 25	54 7	56 50	5 5	55 00	55 13	55.50	55 25	...	...	6,700
Cal. & Hecla, c.	25	100,000	6.0	645	645	...	650	642⅛	645	...	640	625	...	...	190
Catalpa, s	10	300,000	...	...	...	...	...	...	...	...	...	...	...	...	.....
Centennial, s.	25	80,000	24.50	24 00	24 38	24 0	24.25	24 00	24 25	24.00	24 50	24 0	...	...	23,522
Cochiti	10	150,000	...	...	...	...	...	...	...	...	...	...	...	...	.....
Dominion Coal	100	150,000	36 00	35.50	35.25	34.50	35 75	34 00	35 00	33 88	34 50	33.50	...	...	12,54
do. pref.	100	30,000	117	...	...	...	...	...	117	...	117	...	...	...	15
Dunkin Mg	25	300,000	...	...	...	...	...	...	...	...	...	...	...	...	.....
Humboldt, c.	25	40,000	4.75	4 50	4 88	5 5	5.00	4 25	...	...	...	...	...	...	1,485
Illinois Steel	100	186,500	...	...	...	...	...	...	...	...	...	...	...	...	.....
La Foysle Con.c.	25	100,000	33 0	30 75	32.50	31 00	32 0	31 25	31 25	29 50	31 00	30 00	...	...	3,750
Lake Sup., i	25	84, 00	...	...	...	...	...	...	...	...	...	...	...	...	.....
Mercer, c	15	100,000	...	...	...	...	...	...	...	...	...	...	...	...	.....
Napa, q	7	100,000	...	...	...	...	...	...	...	...	...	...	...	...	.....
New Idria, q.	5	100,000	...	...	...	...	...	...	...	...	...	...	...	...	.....
Old Dominion, c	25	150,000	36.00	35 13	35.5	34 50	35 25	34 50	35 00	34 13	35 00	34 50	...	...	16,55
Osceola, c.	25	100,000	77.00	74.00	74 75	72 50	75 00	73 75	74 75	72 50	73.25	72.25	...	...	11,064
Parrot, s c	10	230,000	30.00	27 00	30 00	27 0	30.0	27.00	30.00	27 00	...	...	...	...	.....
Pioneer, g	10	100,000	...	...	5.13	5.00	5.25	5 13	5.13	5 00	...	...	...	...	70
Quincy, c	25	100,000	143⅜	135	141	...	140⅜	140	...	144	144⅛	141	...	...	1,489
San. Ysabel, g.	5	100,000	...	...	7.00	...	7 00	...	...	6 50	...	...	...	...	210
Tamarack, c	25	60,000	183	181	180	...	180	...	180	.78	178	177	...	...	1 935
Tecumseh, c	25	40,000	6 00	5 50	6 00	5 25	6.13	5.50	6 00	5 13	5 75	5 6	...	...	3 9 0
Utah Con., g	10	1 0,000	...	...	...	...	...	...	...	...	...	...	...	...	.....
Victor	5	200,000	6.75	6.50	6 50	...	6 88	6.50	...	...	6 00	5 75	...	...	2,150
Washington Mg	25	40,000	1 63	1 5	1 5.	...	...	...	...	...	1 63	1 50	...	...	4,1 0
Wolverine, c	25	60,000	34 00	33 50	33 75	33 25	31 75	32 75	33.50	33 0	33 0	32 50	...	...	4,0 0

†Official quotations Boston Stock Exchange. Total shares sold, 194,944. *Holiday.

BALTIMORE, MD.‡ Nov. 24

Name of Company.	Location.	Par value	Bid.	Ask	Name of Company.	Location.	Par value	Bid.	Ask
Atlantic Coal	Md.	$10	.....	.....	Howard C.&C	Md.	$5	..	..
Big Vein Coal	"	10	.....	.....	Newburg Orrel C.	"	25	.....	.....
Consolidation Coal	"	100	50	52	Silver Valley	N. C.	5	.....	.....
George's Creek Coal.	"	100	113⅜	115	...	...	...	.....	.....

CLEVELAND, O. Nov. 22.

Name of Co.	Iron Range	Par Val.	Nov. 22. Bid.	Nov. 22. Ask.	Name of Co.	Iron Range.	Par Val.	Nov. 22. Bid	Nov. 22. Ask.
Aurora	Gogebic	$25	...	$4	Jackson	Marquette	$25	...	...
Champion	"	25	...	25	Lake Superior	"	25	$36	$30
Chandler	Vermillion	25	$40	41	Minnesota	Verm. & Mes	0	90	90⅝
Cleve'd-Cliffs	Marquette	100	43⅜	45	Pitts & L'keAng	Marquette	25	105	125
Fed. Steel Co.	...	100	29⅜	29⅝	Republic	"	25	9	10

ST. LOUIS, MO. Nov. 23.

Name of Company.	Location.	Par value.	Latest Bid.	Latest Ask.	Sales.	Name of Company.	Location.	Par value	Latest Bid.	Latest A k	Sales.
Am. Gold.	Colo.	$10	.....	.....	.....	Granite B.	Mont.	$10	$1.50	$1.6.	10
Am Nettie	Colo.	10	$0.85	$1.00	.....	Hope St.	Mont.	10	.....	.....	.....
Central L	Mo.	100	.....	.....	.....	St. Joe. L	Mo.	10	.....	.....	.....
Doc Run L	Mo.	100	.....	.....	.....	Sm. Hopes	Colo	20	1 20	1 65	3 0

COLORADO SPRINGS, COLO.†

Name of Company.	Par val	Nov. 14. B.	Nov. 14. A.	Nov. 15. B.	Nov. 15. A.	Nov. 16. B.	Nov. 16. A.	Nov. 17. B.	Nov. 17. A.	Nov. 18. B.	Nov. 18. A.	Nov 19 B.	Nov 19 A.	Sales
Alamo	$1	.04⅜	04⅜	.04⅜	.05	04⅜	.....	04⅜	...	...	...	...	...	25,0.0
Anaconda	1	5 1	...	...	...	.50	...	60	63⅛	...	...	...	...	3,2 0
Arg'nauna	1	21⅜	.25	2.⅜	.23	.22	.22⅜	.22⅜	23⅜	.22⅛	22⅜	.23⅜	25	12,50
Banner	1	15	.01	...	...	...	...	...	...	.01	...	...	...	13,0.0
Battle Mtn.	2	...	...	...	...	...	...	...	...	...	...	...	...	.....
Bob Lee	1	...	005	0.5	.....	.0.5	.....	...	...	...	...	...	...	32,000
C. Ian bine	1	.....	...	.....	...	.....	...	.....	...	...	...	...	...	.....
Cr. & C. C.	1	.....	...	.....	...	.....	...	.....	...	...	...	...	...	.....
C. C. Con	1	.....	...	07⅜	...	07⅜	...	07⅜	...	...	...	05	07⅜	8,000
Currency	1	.....	...	.....	...	.....	...	.03⅜	...	...	...	...	...	6,0.0
Des Moines	1	.....	...	01⅜	01⅜	.....	...	.....	...	...	...	01⅜	.0 ⅛	8,500
ElktonCon	1	94	95⅜	9.⅜	99⅝	97⅛	99⅜	99	99⅜	99⅛	99⅛	.92	99⅜	7,000
El Paso G.	1	1⅜	.13⅜	.12	...	...	...	...	...	13	...	...	...	5,0 0
Fanny R.	1	.....	...	...	...	43⅜	.....	43	...	.44	45	.43⅜	43⅜	4,3 0
Favorite	1	.....	...	03	...	.03	...	...	...	...	...	02⅜	...	15,0 0
Findley	1	16⅜	17⅛	15⅜	17	.15⅜	15⅜	16	16⅜	17	17⅜	16⅜	17⅜	250,500
Franklin	1	.....	...	.....	...	.....	...	.....	...	...	...	...	...	.....
Gold & Gl.	1	.05	.06	.05⅜	.07	.....	...	.05⅜	.06	...	...	.06	...	30,000
Golden Fl.	1	.....	...	.27	...	.....	...	.....	...	...	...	...	...	2 0
Hayden G.	1	.....	.08	...	...	.....	...	.....	...	...	...	...	...	10,000
Independ'e	1	.....	...	...	...	.....	...	.007⅜	...	...	...	...	...	.....
Ing. Con	1	.....	...	.18	...	07⅜	...	07⅜	07⅜	07⅜	07⅜	.0.⅜	...	75,500
Isabella	1	.26	...	.26	26⅛	.25⅜	26⅜	26	26⅛	27	27⅛	.27⅜	27⅜	23,4 0
Jack Pot	1	21	22⅜	21	22	2.⅜	.2.	.20⅜	21⅜	2.⅜	22⅜	23⅜	23⅜	142,5.5
L xington	1	.....	...	...	...	.....	...	.....	...	...	...	...	...	5 0
Lillie	1	.....	...	5 50	...	.....	...	.....	...	01⅜	.0 ⅛	.01	01⅜	16,592
Ma'net R.	1	.	0.⅜	.01⅜	...	.....	...	.....	...	...	...	...	...	.....
Marion	1	.....	...	.....	...	.....	...	.....	...	...	...	...	...	.....
Matoa	1	.3⅜	.32	...	...	.29	.30	...	...	.29	...	.29	30	16,000
Mobile	1	.03⅜	04⅜	04	04⅜	03⅝	...	.03⅜	03⅜	03⅜	...	03⅜	...	306,000
Moll e Gib	1	...	...	...	...	...	...	...	...	...	...	2.⅜	...	1,0 0
Moon-A'c't	1	.....	1 15	1 13⅜	1.14⅜	1 14⅜	1 15	...	...	1.18	1 19⅜	1 19	...	15,500
Mt. Rosa	1	.....	...	...	...	...	...	...	...	...	...	...	...	.....
New Haven	1	.....	...	02⅜	(2⅜	02⅜	...	02⅜	(2⅜	02⅜	...	02⅜	...	5,000
Orbole	1	.....	.13⅜	01⅜	...	.....	...	.....	...	01⅜	...	...	...	10,0.0
Pharmacist	1	.01⅜	04⅜	.04	04⅜	.03⅜	04	.03⅜	04	.03⅜

STOCK QUOTATIONS.

DENVER, COLO.‡

Name of Company.	Par val.	Nov. 14 B	Nov. 14 A	Nov. 15. B	Nov. 15. A.	Nov. 16 B	Nov. 16 A.	Nov. 17. B.	Nov. 17. A.	Nov. 18 B.	Nov. 18 A.	Nov. 19 B.	Nov. 19 A.	Sales.
Mines.														
Anac'da G.	$5	.62	....	.60	63	.59	.62	59⅞	.61⅝	6	....	62	.65	200
Anch'a Lei	1	.75	....	.75	....	....	....	81	.83	76	....	....	....	500
Arca'a Con.	1	02⅝	.13	03	03⅝	02⅛	03	02⅝	03⅜	.02⅛	.04	02⅝	....	1,000
Arg. J.	1	25⅜	27	2 ¾	.22½	21⅜	22⅜	22⅜	....	.22½	23⅜	25⅛	....	3,000
Bankers.	1	06¼	06⅝	06⅜	.06⅜	06⅛	06⅜	06	06⅜	06	06⅜	.05⅞	06¼	10 0.0
Big Six.	1	....	....	.07	....	05	....	05	....	....	....	05	....	2, 0
C. C. Con.	1	.07¾	.08	07⅝	....	07⅝	08	07⅝	08	0 ⅝	.10⅝	07¾	....	5,000
Elkton.	1	97	.99	98	1 03	98	.99	98	.99	99	1 00	99⅝	1 00	8,000
El Paso, G.	1	11	.12½	....	....	11	.13	1	.12⅜	11⅜	12⅜	.11⅝	....	5,000
Enterprise	1	04	04⅝	....	....	04⅜	04⅝	....	....	04⅜	04⅝	04	....	13,000
Fanny R.	1	.43	.48	....	....	42	44½	43	....	....	44⅝	....	....	....
Gold & 31	1	04⅜	.05¾	....	....	04⅜	.07	....	....	.05	0 ¾	....	....	1,000
Inop'n.M.T.	1	.53	....	....	....	.53⅜	54⅜	54⅜	55⅜	53	....	.55	55⅜	7,000
Iron Clad.	1	.02¾	.13	02⅜	.03	0.9⅜	03	03	.03¾	03	03⅜	.03	....	5,500
Isabella.	1	.25⅜	....	26¾	....	26	2 3⅜	26½	27	26¾	....	27	....	3,000
Jack Pot.	1	.21⅜	.22¾	21	.22⅜	.20	20⅜	....	....	2 3⅜	....	2 3⅜	....	1,000
Matoa.	1	.31⅜	....	....	....	29⅜	31⅜	30	32½	28	....	30	31⅜	500
Moon A.	1	1 14	1.17	....	....	1 13	1 14	5	.1.15⅜	1 18	1 18¾	1 .8⅝	1 .9	16,500
Mt Posa.	1	18	.19	....	....	1.9¾	.18⅜	.18	18⅜	....	....	.19⅜	.20	17,500
New Zeal'd.	1	11¾	.3	11	.12	11	.13⅜	11⅜	.13	10⅜	11	10	12⅜	1, 0
Peoples.	1	0.3⅜	....	01⅜	....	01⅜	....	.0.	....	0.⅜	....	.0.⅜	....	1,0 0
Pharmacist	1	04⅝	....	....	....	....	05	03¾	04	.04	....	0.5¾	04½	5,000
Portland	1	1 42	....	1 40	....	1 41	....	1 42	1 43	1 41	1 45	1 44	....	1,500
Sacram'nto	1	.04¾	04⅜	.04	05	03⅝	04⅜	.04	04⅜	04	04⅜	04	.04¾	8,0 0
Smuggler.	1	....	....	....	....	28	....	....	....	....	....	20	....	....
Specimen.	1	.03⅞	.04⅜	....	....	03⅜	04⅜	.04	04⅝	.04	.04⅜	.04	.04⅜	8,0 0
Union Gold	1	20	....	.20	21	19⅝	.20⅜	20⅜	20⅝	.19⅜	.2 ⅜	20	.2.⅜	9, 0
Va. M.	1	.03	.03¼	.03	....	03	03⅜	03	03⅜	03⅜	03⅜	03	.03⅜	7,500
Work.	1	....	....	....	....	.13	13⅜	.12⅝	....	.3	13⅝	12⅜	.3⅜	14,000
Prosp'cts.														
C. C. Imp.	1	.0019¼	.02¾	.01⅝	.02⅝	0013⅜	02	.01⅝	....	.001⅝	....	.001	....	11,000
Finoley	1	16⅜	....	16	17	....	16⅜	15⅝	.16⅜	15	17⅜	16⅜	17⅜	3,0 0
Geo Wash	1	002⅜	.003⅜	....	004	0 2⅜	.0 3⅜	00.⅜	.003⅜	.002⅜	0.3¼	002	....	5,000
Gilpin Four	1	004	005	....	....	004	0.5	004	005	04	.15	.04⅜	0.5	4,0 0
Gregory Lde	1	006⅜	007	....	....	006⅜	0075⅜	0006⅜	007	0061⅜	007	005	....	1,000
Illinois	1	0 3	....	.001	....	001	....	005	0.03⅜	0.3	0.6	003	0043⅜	6,0 0
New Haven	1	02⅜	023¼	....	....	....	.02⅜	02⅜	.2.⅜	02	03⅜	015⅜	.023¼	3,0 0
Old Gold.	1	005⅜	....	006	.0.6¾	0.5⅜	0 6	0.5⅜	006⅜	0 5⅜	06⅜	0.5⅜	0 6	4,000
Pilgrim.	1	.003	004	003	.004	003	.0 3⅜	005	00.3¾	003	004	.003	.003¾	7,000
Pine Creek	1	.003¾	004	.0 3⅜	04	0 3⅜	.001	0033⅜	04	002⅜	....	003	.0 3⅜	10,000
Reno.	1	.019⅜	....	.019⅜	....	01⅜	....	01⅜	02	019⅜	02	0.⅜	02	....
Tamarack.	1	....	006	....	....	005⅜	006	005	006	0055⅜	0.6	0 3⅜	006	4,500
W.of F Con	1	.0 3	....	.003⅜	.0 4	003	....	....	....	003⅜	0.4	0 3	....	7,000

‡Official Quotations Denver Stock Exchange. Sales: Mines, 155,5.0 shares; Prospects, 65,700 shares; grand total, 222,200 shares.

SAN FRANCISCO, CAL.†

Name of Company.	Location.	Par. value.	Nov. 18.	Nov. 19.	Nov. 21.	Nov. 22	Nov. 23.	Nov. *24
Alpha Con.	Nev.	100	.02	.03	.03	.06	03	.....
Alta.	"	100	.11	13	.14	.11	.13	.....
Andes	"	100	.09	11	.1.1	06	.09	.....
Belcher	"	100	.22	.25	.24	.25	.24	.....
Best & Belcher	"	100	.37	.38	37	37	.35	.....
Bullion	"	100	.06	.06	06	06	.05	.....
Caledonia	"	100	24	.....	25	23	.23	....
Challenge Con.	"	100	.17	.17	19	18	.17	.....
Chollar	"	100	.24	.25	25	.25	.24	.....
Confidence	"	100	54	57	53	05	05	....
Con. California & Virginia	"	100	1 30	1 25	1 25	1 25	1 20	.....
Cons. Imperial	"	100	.01	.01	01	.01	01	....
Cons. New York	"	100	....	....	....	....	....	.....
Crown Point	"	100	.18	.20	21	.22	21	.....
Exchequer	"	100	....	....	....	02	....	.....
Gould & Curry	"	100	19	19	20	18	16	.....
Hale & Norcross	"	100	1.15	45	1 15	1.15	1 25	.....
Julia Con.	"	100	....	01	01	.01	0.	.....
Justice	"	100	.21	.22	20	....	17	.....
Kentuck Con.	"	100	05	05	07	.06	.05	.....
Mexican	"	100	.29	31	28	.21	26	.....
Occidental Con.	"	100	.46	.49	.58	.63	.64	.....
Ophir	"	100	.70	.71	.74	.69	.66	.....
Overman	"	100	.05	05	.15	.05	.05	.....
Potosi	"	100	.15	16	.16	14	.15	.....
Savage	"	100	19	19	20	.19	.19	.....
Scorpion	"	100	02	03	....	....	....	.....
Sierra Nevada	"	100	1.05	1 10	1.15	1.15	1 05	.....
Silver Hill	"	100	....	....	....	05	....	.....
Standard	Cal.	100	1.70	1 70	1 75	1.75	1.75	.....
Union Con.	Nev.	100	.29	.33	32	30	....	.....
Utah Con.	"	100	14	16	15	15	26	.....
Yellow Jacket	....	100	.19	21	.22	.21	.19	.....

Official telegraphic quotations, San Francisco Stock Exchange. *Holiday.

ROSSLAND, BRITISH COLUMBIA.* Nov. 17.

Name of Company.	No. of shares.	Par value	Selling price.	Name of Company.	No. of shares.	Par value	Selling price.
Brandon & Gold. Cr.	1,50,0,000	$1	$0 25	Lerwick.	500,000	$1	.....
Brit. Amer. Corp'at'n	7,500,000	5	3 85	Lily May.	1,000,000	1	.....
Brit. Col Corpor. tion	1,500,000	2½	.....	Lon.&Van.Fin. Dev.Co	500,000	5	.....
Canadian Gold Fields	10,0.0,000	0 10	.10	London B. C. Gold F.	250,000	5	.....
Cariboo.	1,500,000	1	1 10	Monte Cristo	1,000,000	1	.....
Commander	5.0,000	1	.12	New Gold Fields, B.C.	250,000	1	$3.85
Deer Park.	1,000,000	1	.18	Novelty	1,000,000	1	.04
Dundee.	1,000,000	1	.45	Queen Bess Prop.	120,000	5	.20
Evening Star.	1,000,000	1	....	Rambler Cariboo.	1,000,000	1	.17
Fern	200,0.0	¼	.85	Reco.	1,200,000	1	1 75
Gold Fields of B.C	3,.0,000	3½	.....	Red Mt. View	1,000,00	1	.....
Hall Kines	250,0.0	5	4 90	St. Elmo.	1,000,000	1	.....
Hattie Brown	1,000,000	1	.....	St. Paul.	1,000 00	1	.....
Homestake	1,000,0.0	1	65	Sarah Lee	1,000,000	1	.20
Iron Colt	1,0.0,000	1	.....	Silver Queen	1,.0.000	1	18
Iron Horse	1,000,000	1	.....	Slocan Star.	500.00	1	2.20
Iron Mask.	500,000	1	.70	Vic Tr. MinesDev. Co.	25,000	5	.....
Josie	700,000	1	.....	Virginia	500,000	1	.....
Jumbo	500,000	1	.....	War Eagle Con.	2,000,000	1	3.0
Kenneth	1,000,000	1	.25	Waverly Mines.	100 000	5	.....
Keystone	1,500,000	1	.20	White Bear.	2,000,000	1	.10
Kootenay Gold Fields	20,000	5	.....	Wild Horse.	400 000	1	.....

* From Our Special Correspondent.

SHANGHAI, CHINA.‡ Oct. 10.

Name of Company.	Country.	No. of shares.	Value. Par.	Value. Paid up.	Last dividend. Date.	Last dividend. Amount.	Price
Jelebu Mg. & Trad.	China.	45,000	$5	$5	Oct., 1894.	$0.25	Taels 3 28
Punjom Mg., Ltd.	"	6,0.0	8	5	.....	.....	" 3 38
do. pref	"	30,000	1	1	.....	.....	" 1.10
Raub Australian G. Mg	"	200,000	£1	14s. 10d	July, 1898	.51	" 25 91
Sheridan Con. M.& M.	Colorado, U.S	20,000	Taels 100	Taels 100	.....	.....	" 2.25

‡ Special Report of J. P. Bissett & Co. The prices quoted are in Shanghai taels

SALT LAKE CITY, UTAH.* Nov. 19.

Stocks.†	No. of shares	Par val.	Bid.	Asked.	Stocks.†	No of shares.	Par val.	Bid.	Asked
Ajax.	300,000	$10	$0.64	$0.69	Homestake.	400.000	$1	$0 03¾	$0.03¾
Alice.	400,000	25	.75	1 25	Horn Silver.	400,000	25	1.15	1.25
Anchor.	150,000	10	65	.75	Little Pittsburg	400,000	5	04¾	05
Brick Con.	500,000	1	.....	.....	Lower Mammoth	150,000	1	71¼	.74
Buckeye.	500 000	1	04¾	06	Mammoth	400,000	5	1.95	2 00
Bullion-Beck & Ch.	100,000	10	5 25	5.75	Mercur.	200.000	25	7 05	7 22½
Centennial Eureka	30,000	50	38 0	43 00	Northern Light.	400,000	5	31¾	.32½
Chloride Point.	500, 00	1	1 10	1.15	Omaha	300.000	2	.57	.59
Daisy.	500,00	3	60	.63	Ontario.	150,000	100	6.00	7.00
Dalton	500,000	5	01¾	02	Overland	400.000	5	.....	.....
Dalton & Lark.	2,500,000	1	05½	.10	Richmond-An	500,000	1	.06¼	.07
Daly.	150,000	20	.90	1.07½	Sacramento	1,000,000	5	.62	63¾
Daly West.	75,000	20	4 35	5 00	Silver King.	150,000	20	28 00	32 00
Dexter.	200,000	5	3.0	3 05	Sunbeam.	250,000	1	.09	.09¼
Eagle.	150,000	1	.10	.12	Sunshine.	250,000	10	42	50
Emerald	300,000	1	18	20	Swansea	100,0 0	5	3 50	3 65
Four Aces.	250,000	1	2 3¾	2 8¼	South Swansea.	150,00	1	1 27½	1.32½
Galena	100,000	10	55½	60¾	Utah	100,000	10	.70	.88
Geyser-Marion.	300,000	5	.63	.66	Yaleo	200,000	1	1.45	1.50
Grand Central.	250,000	1	7.25	7 50	Young America.	200,000	1	50	.55

*From Our Special Correspondent. † Utah companies. ‡ Mines in Vanderbilt, Cal. Mines in Tuscarora, Nev.

HELENA MONT.* Nov. 11.

Name of Company.	Location.	Company's office	Par value.	Bid.	Asked.	Shares sold.	Price.
Am. Dev. & M.	Idaho & Mont.	St. Paul, Minn., &Gib'ville,Id.	$5	.....	$1.00	.....	.....
Bald Butte.	L. & Cl'ke Co.	Helena, Mont.	1	$2 00	2 50	550	$2.00
Bi-Metallic.	Granite "	St. Louis, Mo.	5	.....	.....	.....	.....
Con.T.&P'rm'n	Cœur d Alene,Id	Burke, Id.	5	.50	.60	1,000	.45
Gold Mountain,	Ruby, Mont.	.....	.....	1.15	1.25	15,000	....
Helena & Frisco	Cœur d'Alene	London.	5	7.00	7.50	100	8.00
Iron Mountain.	Missoula, Mont	Helena, Mont.	5	.....	.....	.....	.....
Judge.	Meagher Co."	"	.....	.08	.10	116,000	.....
Merrill (Gold).	Jefferson " "	Butte "	1	.....	.....	.....	.....
Ontario.	DeerLodge" "	Helena "	1	.....	.....	.....	.....
Yellowstone.	Meagher " "	" "	5	.05	.07½	7,500	.05 to .07

* Special Report of Samuel K Davis. Total shares sold, 2,600.

TORONTO, CAN.

Name of Company.	Par val.	Nov 17. B.	Nov 17. A.	Nov 18 B.	Nov 18 A.	Nov. 19. B.	Nov. 19. A.	Nov. 21. B.	Nov. 21. A.	Nov. 22. B.	Nov. 22. A.	Nov. 23. B.	Nov. 23. A.	Sales
Ontario:														
Ham Reef.	$1	15½	19	15	.17¾	.....	19¼	.89	.19	....	.20	....	.20	.....
Olive	1	.89	90	89	.91	89	.90	.89	90	89	90	.89	90	.....
Sun G & C.	.	06⅜	07	06	07	06	.07	06	.07¾	.06⅜	.07	.06¾	.07¾	8,100
British Col.:														
Athabaska.	1	40	42	39½	4	.42	43	39½	42	39	.42	38	42	1,600
Big Three.	1	....	13	....	.13	10	.13	....	.13	....	.13	....	13	.....
C'rib'o,M'K	1	1.03⅜	1.09	1 07	1 10	1 08	1. 0	1 09	1.10	1 08	1 12¾	1.20	1.22	1,500
Command'r	1	.10	.12	10	.13	.10	.13	10	.13	.10	2¾	10	.13	.....
Deer Park.	1	15	.18	14½	18	....	.18	14	16	14	.17	14¾	16	....
Dundee.	1	....	45	....	45	....	.45	....	45	....	.45	.2.⅜	40	3,300
Giant.	1	....	.08	....	.08	....	08	....	.08	....	.08	.07	.07½	5.0
Gold. Cache	1	05	.07	.04¾	.08	05	08	.04¾	05	.05¾	.0.⅜	05	.07⅜	4,000
Grand Prize	1	....	.04¾	....	01¾	....	04¾	....	01¾	....	04¾	....	.04	.....
Iron Colt	1	.09	.09¾	.09	.09¾	09	.10	.08¾	.10	.08¾	.09¾	.08¾	.10	.800
Keystone	1	....	11	....	11	....	11	....	.11	....	.11	....	11	1 5 0
Minnehaha	1	.17¾	.22	17¾	22	17¾	.22	17	.22	17¾	.22	.17¾	.22	54,0.0
Monte Crist	1	.09¾	.10	.09	10	.09	.10	09	10	09¾	10	.09¾	.10	....
Novelty.	1	03¾	.05	03¾	.05	.03¾	.05	.04	.05	04	.05	.04	.05	1,.0.0
St. Elmo.	1	.03¾	04¾	03¾	.05	....	.04	.05	04	.05¾	....	.04	.05	1,000
Silver Bell	1	....	05	....	.05	....	.05	....	.05	....	.05	....	.05	2,100
Smuggler,g.	1	.18¾	19¾	18¾	19¾	18¾	19¼	18	.19¾	18¾	19¾	.18¾	.2.⅜	2,.0.0
Van Anda	1	04	05	04	05	.03¾	05	.03¾	05	.05¾	.05	04	.05	9,600
Victory Tri.	1	.07	.08	....	06	08	.09	.07	.08	.06¾	.09	.05	.10	1,0 0
Virginia	1	....	.30	....	....	....	....	....	....	....	45	....	.40	500
War Eagle	1	....	....	2.91	....	2 88	2 85	2 89	....	2 85	2 88¾	....	2 90	5.0
White Bear.	1	....	06	06	.07	.06	06¾	06	.06¾	.06	.06¾	.06¾	07	17,000
Develop Co:														
B.C. Gold F.	1	05	05¾	.04¾	03¾	.04¾	05¾	.04	06	04	.05¾	....	....	....
Can. G. F.	0.10	.04	07	....	....	....	07¾	.05	.0.	.15	07	.....	.07	1,000
Gold Hills.	1	.01	.03	.....	....	....	.10	.....	10	.....	10	.....	.0	.....

Total sales, 11.,20) shares.

MEXICO. Nov. 17.

Name of Company.	No. of shares.	Last div'd	Prices. Op'g	Prices. Cl'g.
Chihuahua:				
Gloria.	1,500	.....	$60	$50
Durango:				
Barradon y Cab.	2,400	.....	150	150
Candelaria de Pan.	1,200	.....	20	20
Capuzayca.	2,400	.....	10	10
Penoles	2,300	30.00	2,300	2,000
Restauradora.	10,000	.....	20	30
Rosario y Anexas.	4,800	.....	20	30
Guanajuato:				
Angustias.	2,400	10.00	420	350
Cinco Senores y An	2,0.0	15.00	440	50
El Oro	500	.....	30	30
do. pref.	2,000	.....	30	30
Guadalupe	10,0.0	2.00	220	240
Trinidad, aviador	2,000	.....	140	14.
do. aviado	400	.....	125	110
Zona Minera de Paz	2,400	.....	25	15
Hidalgo:				
Amistad y Concord.	9,600	1.38	28	27
Arevalo	730	.....	200	200
Bartolome de Med.	2,000	3.00	80	80
Carmen.	1,1.0	7.75	501	5.0
Luz de Maravillas.	1,000	.....	150	180
Pabellon.	1,000	27.89	50	40

Name of Company.	No. of shares	Last div'd	Prices. Op'g	Prices. Cl'g
Hidalgo:				
Real del Monte.	2,554	10 00	780	800
San Francisco.	6,000	2.00	265	280
San Rafael y An	1,200	10 40	1,050	1,000
do aviado	1,200	10 00	4.0	5.0
do. del Oro.	3,000	.....	10	15
Soledad.	9.0	5 00	38.	400
Sorpresa.	960	5 00	260	350
Union.	2,000	4.00	260	300
Mexico:				
Coronas.	500	.....	75	75
Esperanza y An.	3,000	10 00	1,300	1,350
Michoacan				
Luz de Borda ava	3,000	.....	15	12
do aviado.	1,000	.....	20	15
Pueblo:				
Tlauzingo.	2,400	.....	40	27
S. Luis Potosi:				
Concep. y An.	3,000	.....	10	90
Sta. Mariadela Paz	2,400	10 00	700	715
Zacatecas:				
Asturiana y An	2,500	10.00	70	90
Cabezon	2,400	.....	20	15
C'delar. de Pinos.	2,5.0	.....	150	160
Palma de Somb.	2,4.0	.....	100	100

NOTE.—In most of the older Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Many newer companies have a nominal par value, usually $5) or $10) Prices are in Mexican dollars.

VALPARAISO, CHILE.‡ Oct. 8.

Name of Company.	Location.	Capital paid.	Sh.Val paid up.	Last Div'n'd, Amt.	Last Div'n'd, Date.	Prices. Bid.	Prices. Asked.	Prices. Last sale
Arturo Prat, silver	Chile.	$3,300,000	$100	4 p. c.	1897	16	18	19
Caracoles, silver	" ...	315,000	100	10 "	1893	....	....	.....
Huantajaya (mine) silver	" ...	1,000,000	100	13 "	1894	.....	.....	.....
Huanchaca, silver	Bolivia,	8,000,000	25	8 "	1895	30	31	31
Oruro, silver	Chile...	800,000	200	.....	.....	240	360	240
Todos Santos, silver	" ...	2,000,000	100	1 "	1895	6	10	5
Agua Santa nitrate	" ...	3,000,000	50	2 "	1898	1 0	165	156
Antofagasta, nitrate	" ...	2,000,000	200	3 "	1898	128	130	128
Soc Internacional, nitrate	" ...	1,800,000	60	.....	.....	.....	.....	.....
Union, nitrate	"	5,0.0,000	200	.....	.....	65	70	60

‡ Special Report of Jackson Bros. Values are in Chilean pesos or dollars.

STOCK QUOTATIONS.

LONDON.

Nov. 12.

Name of Company.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers
			£ s. d.	s.d.		£ s. d.	£ s. d.
§Alaska-Mexican, g	Alaska	£200,000	1 0 0	0 4.8	Nov., 1898	1 2 6	1 7 6
§Alaska-Treadwell, g	"	1,000,000	5 0 0	1 6	" "	4 15 0	5 0 0
Anaconda, c., s	Montana	6,000,000	5 0 0	5 1¾	Nov., "	5 12 6	5 15 0
Cariboo, y f, pref	British Col'mbia	160,000	1 0 0	.....	.....	15 0	1 0 0
Chispas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
Con. Gold Fields	"	300,000	1 0 0	.....	.....	10 0	15 0
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1898	4 6	5 6
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	1 0	June, 1898	1 3	3 9
Golden Gate, g	California	80,000	1 0 0	.....	.....	2 6	5 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Sept., 1898	1 8 9	1 11 3
Hall Mines, c., s	British Col	250,000	1 0 0	1 0	May, 1898	12 6	15 0
Lillooet F. R. & Car., g	" "	300,000	1 0 0	.....	.....	5 0	10 0
Montana, g., s	Montana	660,000	1 0 0	0 3	May, 1898	7 6	8 6
Mountain Copper	California	1,250,000	5 0 0	2 6	Sept., 1898	4 12 6	4 15 0
Pumas-Eureka, g	"	281,250	1 0 0	0 6	Oct., 1898	2 0	3 0
Richmond, g., s., l	Nevada	270,000	5 0 0	1 0	Dec., "	8 9	11 3
Sierra Buttes, g	California	245,000	2 0 0	0 6	Apr., "	1 6	2 6
Colomb. Hydraulic, g	Colombia	75,000	1 0 0	6	Oct., 1898	13 9	16 3
Copiapo, c	Chile	200,000	2 0 0	2 0	June, 1898	2 13 9	2 16 3
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1898	1 15 0	2 0 0
*St. John del Rey, g	Brazil	600,000	5 0 0	0 6	July, 1898	1 6 0	1 7 0
Tolima A., s., g	Colombia	70,000	5 0 0	5 0	July, 1897	1 0 0	1 10 0
Tolima B., s., g	"	30,000	5 0 0	5 0	"	15 0	1 5 0
Utah Con., g	Utah	300,00	1 0 0	rts.	Mar., 1898	2 15 0	3 0 0
Linares, l	Spain	45,00	5 0 0	12 6	Sept., 1898	8 0 0	8 10 0
Mason & Barry, c., sul	Portugal	630,000	5 0 0	4 0	Oct., 1898	3 0 0	3 5 0
Rio Tinto, c	Spain	1,625,000	5 0 0	£1	Nov., 1898	30 17 6	31 0 0
" pref	"	1,625,000	5 0 0	2 6	May, 1898	5 18 9	6 0 0
Tharsis, c	"	1,350,000	2 0 0	10	" 1898	7 7 6	7 12 6
Assoc. Gold Mines	W. Australia	5 0,000	1 0 0	2 0	July, 1898	5 3 9	5 6 3
Broken Hill Prop., s	N.S. Wales	384,000	8	1 6	Oct., 1898	2 3 9	2 6 3
*Great Boulder, Prop	W. Australia	1,750,000	2	6	July, 1898	18 9	19 3
§Hannan's Brownhill, g	"	110,000	1 0 0	7 6	Nov., 1898	7 8 9	7 11 3
Harquahala	"	300,000	1 0 0	6 0	Nov., 1894	.....	6
Ivanhoe Gold Corp	"	1,00 ,000	5 0 0	.....	.....	6 10 0	6 12 6
Kalgurlie, g	"	120,000	1 0 0	.....	.....	6 6 3	6 8 9
Lake View Consols, g	"	250,000	1 0 0	16 0	Apr., 1898	9 12 9	9 16 3
Mt Lyell M. & R., l., c	Tasmania	900,000	5 0 0	2 0	Oct., 1898	6 15 0	7 0 0
§Mt Morgan, g	Queensland	1,000 00	1 0 0	7	Nov., 1898	4 18 9	5 1 3
Waihi g	New Zealand	3 0 000	1 0 0	2 0	Sept., 1898	4 2 6	4 5 0
West Aust. Jt. Stk. Lin. & F	W. Australia	1,000	1 00	1 0		7 6	8 6
Champion Reef, g	Colar Fields	240,000	10 0	3 6	Sept., 1898	4 13 9	4 16 3
Coromandel, g	"	140,000	10 0	1 0	Aug., 1898	1 15 0	1 17 6
§Mysore Gold, g	"	250,000	1 10	5 0	Nov., 1898	5 1 3	5 6 3
Nundydroog, g	"	242,000	0	3 4	" 1898	3 16 3	3 18 9
Ooregam, g	"	145,000	1 0 0	6 0	Aug., 1898	3 6 3	3 8 9
" pref. g	"	120,000	1 0 0	2 6	" 1898	3 18 9	4 1 3
Angelo, g	Transvaal	225,000	1 0 0	5 0	Apr., 1898	6 3 9	6 6 3
*Bonanza, g	"	200,000	1 0 0	10 0	June, 1898	4 3 9	4 16 3
British S. Af., chartered	So. Africa	3,750,000	1 0 0	rts.	Apr., 1898	2 15 0	2 17 6
Cape Copper, c	"	600,000	1 0 0	3 0	July, 1898	5 16 3	5 18 9
" pref	"	150,000	2 0 0	3 0	" 1898	5 2 6	5 7 6
City & Suburban (New), g	Transvaal	1 360,00	2 0 0	8 0	Aug., 1898	5 11 3	5 13 9
Con Deep Level, g	"	260,000	4 0 0	xb.	Apr., 1898	3 2 6	3 7 6
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1898	14 0 0	14 5 0
De Beers Con., d	Cape Colony	3,950,000	1 0 0	£1	June, 1898	£5 15 0	£5 17 6
Durban Roodepoort, g	Transvaal	135,000	5 0 0	4 0	Sept. 1898	5 15 0	6 0 0
Ferreira, g	"	90,000	1 0 0	30 0	Aug., 1898	£4 15 0	£5 0 0
Geldenhuis Deep, g	"	350,00	1 0 0	6 0	" 1898	9 10	9 15 0
Geldenhuis Est., g	"	200,000	1 0 0	2 0	Nov., 1898	7 13 9	7 16 3
Ginsberg, g	"	160,000	1 0 0	4 0	Aug., 1898	3 9 6	3 2 6
Henry Nourse, g	"	125,000	1 0 0	15 0	" 1898	9 17 6	9 12 6
Heriot (New), g	"	115,00	1 0 0	5 0	Nov., 1898	7 5 0	7 10 0
Jagersfontein, d	Orange Fr. St.	1,000,00	1 0 0	6 0	Sept., 1898	8 10 0	8 15 0
Johannesburg Con. Invst	So. Africa	2,75 ,000	1 0 0	2 0	Aug 1898	2 6	1 5 0
Jubilee, g	Transvaal	50,000	1 0 0	5 0	Nov., 1898	11 0 0	11 0 0
Jumpers g	"	100,000	1 0 0	6 0	Aug., 1898	5 5 0	5 10 0
Klenfontein g	"	275,000	1 0 0	rts.	Apr., 1898	2 15 0	2 17 6
Langlaagte Estate, g	"	500,000	1 0 0	3 0	Sept., 1898	3 0 0	3 2 6
May Con. (New), g	"	275,000	1 0 0	2 0	Jan. 1897	3 5 0	3 12 6
Meyer & Charlton, g	"	85,000	1 0 0	5 0	Aug., 1898	4 15 0	5 3 0
Namaqua, c	Cape Colony	200,000	1 0 0	3 6	July, 1898	3 3 9	3 6 3
Primrose (New), g	Transvaal	300,000	2 0 0	5 0	Aug., 1898	4 5 9	4 7 6
Rand Mines, g	So. Africa	400,000	1 0 0	.....	.....	32 5 0	£2 10 0
Robinson, g	Transvaal	2,750,000	1 0 0	2 0	Aug., 1898	8 7 6	8 17 6
Sheba, g	"	1,100,000	1 0 0	0 6	July, 1898	1 7 6	1 10 0
Sim. & Jack Prop., g	"	5,000,000	5 0 0	3 6	Dec., 1898	4 12 6	4 15 0
Sim. & Jack West, g	"	400,000	1 0 0	.....	.....	3 0 0	3 5 0
Sim. & Jack East, g	"	70,000	1 0 0	.....	.....	2 13 9	2 16 3
Wemmer, g	"	60,000	1 0 0	15 0	Nov., 1898	11 10 0	11 15 0
Wolhuter g	"	80,000	4 0 0	6 0	Aug., 1898	5 2 6	5 7 6
Worcester, g	"	100,000	1 0 0	3 0	Oct., 1898	2 15 0	3 0 0

* Dividend pending. § Ex-dividend.

PARIS.

Nov. 3.

Name of Company	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning	Prices. Closing.
			Francs.	Fr.	Fr	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	2.129.00	2,190.00
" " Firminy	"	" "	3,000,000	500	85.00	3.28 00	3,347.50
" " Five-Lille	"	" "	12,000,000	500	35.00	725.00	7.5.00
" " Huta-Bank	Russia	Iron & steel	.....	500	.....	4,53 .0	4,560.00
" " la Marine	France	Steel mfrs.	20,000,00	500	40.00	1,545.00	1,585.00
" " Longwy	"	" "	.....	500	35.00	1,013.00	1, 60 00
Ansin	"	Coal	.....	.....	190.00	5,600 00	5,4.5.00
Biache-St. Vaast	"	Steel	.....	1,000	160 00	3,800.00	3,8 0.00
Boieo	Lower Cal.	Copper	.....	500	93.50	1,865.00	1,865. 0
Briansk	Russia	Coal & Iron	.....	500	.....	1,267 75	8.5.0
Bruay	France	Coal	.....	600	900 00	38,0 0 00	38,00 .00
Cape Copper	S. Africa	Copper	15,000,000	50	1.50	.33 0	143 50
Champ d'Or	"	Gold	3,375,000	25	.....	44 0	44.00
Courrieres	France	Coal	60 ,.00	500	60.00	2,160.00	2,165.00
De Beers Consolidated	S. Africa	Diamonds	98,750,000	125	15.63	643.00	6.9 50
Denain-Anzin	France	Steel	.....	500	30.00	700 0	7.1.0
Dombrowa	Russia	Coal	.....	500	12.50	299 0	293.00
Donetz	"	Steel	.....	.....	.....	1,095 0	1,1 5.0
Dourges	"	Coal	.....	1,000	300.00	21,995.0	21,8.0 .0
Dynamite Centrale	France	Explosives	.....	500	12.50	490 0	490 00
Epinac	"	Coal	.....	2,500	20.83	600.00	6.0.00
Escombrera-Bleyberg	Spain	Lead	.....	500	35.00	1,112.00	1,10 . 0
Fraser River	Brit. Col'mb	Gold	250,0.0	25	.....	0.25	10.25
Huanchaca	Bolivia	Silver	40,0.0,0 0	125	5.00	47 0 00	51.00
Langlaagte Estate	S. Africa	Gold	11,750,000	25	11.25	80. 0	7.50
Lavunas	Chile	Nitrates	16,2 0,000	125	12.50	3 0 0.	30.00
Laurium	Greece	Zinc & lead	16,300,000	500	30.00	624 00	6.0.00
Lautaro	Chile	Nitrates	13,750,000	125	. .	0 5.00	05.00
Maiffano	Italy	Zinc	14,500,000	500	40 00	1,136 0	1,1.9.0
Metaux, Cie. Fran. de	France	Metal d'lers.	25,000,0	500	35.00	658 0	6.5.0
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1, 9 00	1,080.00
Napthe Baku	Russia	Petroleum	.....	.....	.....	671.0	671.50
Napthe, Le	"	"	.....	.....	.....	2,662 50	2,62 .00
Napthe Nobel parts	"	"	.....	.....	.....	4 5.0	465. 0
Nickel	N. Caled'nia	Nickel	6,360,0 0	500	30.00	320 00	31 .00
Pacchia-Jazpampa	Chile	Nitrates	9,000,000	125	.....	0 25	0 50
Penarroya	Spain	Coal, etc	.....	500	65.00	2.58 0	2,5 0.0
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	4 50	4.75
Rio Tinto	Spain	Copper	40,625,000	125	47.70	757 0	7.6.00
" " preferred	"	"	40,625,000	125	.....	154.0	15 .00
Rive-de-Gier	France	Coal	.....	.....	.....	23 25	23.50
Robinson	S. Africa	Gold	68,750,000	125	12.50	223 0	23 .00
St. Etienne	France	Coal	.....	.....	18.00	454.0	450.00
Salines de l'Est	France	Salt	.....	500	11.5o	250 .0	2.0.0
Salines du Midi	France	" etc	.....	500	20.00	9 25 0	925.00
Sels Gem. de la Rus. Mer	Russia	" etc	.....	500	25.00	5 0 0	5.0.00
Tharsis	Spain	Copper	33,750,000	50	8.75	190.50	198 00
Vicoigne-Neux	France	Coal	.....	1,000	700 00	23,6.0 0	23,8 0 .0
Vielle Montagne	Belgium	Zinc	9,000,000	80	30.00	720.0	732.50

MEETINGS.

Name of Company	Location.	Meeting.	Date.	Place.
Alma	Utah	Annual.	Dec 5	Salt Lake City, Utah
Andes	Nevada	"	Dec. 19.	309 Montgomery street, San Francisco, Cal.
Annie Con	Utah	"	Dec. 9	Eureka Utah
Arcadia	Colorado.	"	Jan 6	Colorado Springs, Colo.
Centennial	Michigan.	Special.	Dec. 7	Boston, Mass.
Consolidation Coal	Maryland.	Annual.	Dec. 14.	Baltimore, Md.
Copper Queen Con	Arizona.	"	Dec 17.	Salt Lake City, Utah.
Cripple Cr'k Gold	Colorado.	"	Dec 7	Denver, Colo
Detroit	Utah	Special.	Dec. 6.	8 Commercial Block Salt Lake City, Utah.
Eureka Con	Nevada	Annual	Dec. 20	3 Pine street San Francisco, Cal.
Geyser	Colorado.	Special	Dec 10	Silver Cliff Colo.
Gold Mountain	Montana.	Annual.	Dec. 8	Butte. Mont.
Gould & Curry	Nevada.	"	Dec. 20.	309 Montgomery street, San Francisco, Cal.
Head C & Tr.	California	"	Dec. 14	318 Pine street, San Francisco, Cal.
Mt Diablo	California	"	Dec. 20	318 Pine street, San Francisco, Cal
New York M. & Sn.	Utah	"	Dec. 2	Salt Lake City Utah
Plainview	Colorado.	Special.	Nov 28	People's Nat'n'l Bank Bldg., Denver, Colo.
Santa Rosalia	California	nnual.	Dec. 5	310 Pine street, San Francisco, Cal.
Tintic	Utah	Special.	Dec 13.	314 Atlas Block, Salt Lake City, Utah.

DIVIDENDS.

Name of Company.	Current dividends. Date.	Current dividends. Am't.	Paid since Jan. 1, 1898.	Total to date.
†Ætna Con	.....	.....	$30,000	$150,000
†Alaska-Mexican	.....	.....	90,000	347,031
†Alaska Treadwell	.....	.....	575,000	3,925,000
Alice, Mont	.....	.....	20 000	1,075,000
†American Gold	.....	.....	54 000	362 000
†Anchoria-Leland	Nov.15	6,000	66,000	168,000
Anaconda Copper	Nov. 1	$1,500,000	3,000,000	8,250,000
†Argonaut	.....	.....	180 000	180,000
Associated, Colo	Nov. 3	12,500	50,000	50,000
Atlantic	.....	.....	40 000	780,000
Aurora Iron	.....	.....	50,000	750,000
Boston & Montana	Nov 21	750,000	1,950,000	9,125,000
†Bald Butte	.....	.....	75,000	627,148
Breece	Dec. 1	10,000	10 000	30,000
†Bull-Beck & Ch'n	Nov. 15	10,000	80,000	2 318,000
†Bunker Hill & S	Nov. 4	21,000	207,000	579,000
Calumet & Hecla	.....	.....	4,000,000	54,850,000
†Central Lead	Nov.	5,000	49,000	77,000
Charleston, S. C.	Dec. 1	150,000	30,000	180,000
Colorado Sm	.....	.....	20 ,000	1,595,000
†Crowned K., Ariz	.....	.....	95,000	208,000
De Lamar	.....	.....	115,200	2,451 600
†Elkton, Con	Nov. 21	20,000	220,000	65 ,961
†Empire State Ida	Nov. 15	10,000	35,000	35,000
Enterprise Colo	.....	.....	59,000	900,000
Florence, Mont	.....	.....	5 000	137,530
Geyser Marion	.....	.....	33,000	96 000
†Gold Coin, Vict	Nov. 25	10,000	113,000	13 ,00
†Golden Cycle	.....	.....	50,000	148,30
Golden Reward	.....	.....	15,000	155,000
†Grand Central, Ut	Nov. 10	31,250	187,500	187,500
†Highland	Nov. 17	20,000	220 00	3,764,718
Hope of St. Louis	.....	.....	20,000	762 252
Holy Terror	.....	.....	81.000	117,000
†Homestake	Nov. 25	62,500	573.750	7.118 750
†Horn Silver	.....	.....	60,000	5,210,000
Iron Mountain	.....	.....	10,000	507 500
Iowa	.....	.....	15.000	95 000
†Jamison	.....	.....	39,000	39,000
†Jersey Leas. Colo	.....	.....	11,072	11,072
Lillie	.....	.....	62 .00	146,110
Mammoth	.....	.....	Nov. 1	$20,500
†Mercur	.....	.....	Nov.21	25,000
Merrimac	.....	.....	.....	.....
†Minnesota Iron	.....	.....	.....	.....
†Modoc	.....	.....	Nov.15	10,000
Montana, Lt'd	.....	.....	.....	.....
†Mont. Ore Pur	.....	.....	.....	.....
Moon-Anchor	.....	.....	Nov. 1	45,000
Morning Star	.....	.....	.....	.....
Mt. Rosa	.....	.....	.....	.....
Mountain Copper	.....	.....	.....	.....
†Napa Con	.....	.....	.....	.....
†New Idria	.....	.....	.....	.....
†N. Y. & Hond. R	.....	.....	.....	.....
North Star, Cal	.....	.....	Nov. 1	50,000
Osceola	.....	.....	Dec.20	200,000
†Parrot	.....	.....	Dec. 1	69,000
†Pennsylvania	.....	.....	Nov.	2,57
Pioneer	.....	.....	Dec.15	12,530
†Portland	.....	.....	Nov.15	60,000
Quincy	.....	.....	.....	.....
Raven	.....	.....	.....	.....
†Republic, Wash	.....	.....	Nov 10	30,000
Sacramento	.....	.....	.....	.....
†Silver King	.....	.....	Nov.10	37,500
Small Hopes	.....	.....	.....	.....
†Smuggler	.....	.....	Nov.15	10,000
So. Eureka, Cal	.....	.....	.....	.....
South Swansea	.....	.....	.....	.....
St. Joseph Lead	.....	.....	Dec.21	37,500
Standard Con	.....	.....	.....	.....
Stroug	.....	.....	Nov. 1	25,000
†Swansea	.....	.....	Nov.10	5,000
Tamarack	.....	.....	.....	.....
Victor	.....	.....	Dec. 1	100,000
†Vindicator	.....	.....	.....	.....
†War Eagle, B. C.	.....	.....	Nov.15	26,250
†Wolverine	.....	.....	.....	.....
†Yellow Aster	.....	.....	.....	.....
Totals	.....	.....	.....	$3,248.575
				$18,939,547
				162,280,276

†October dividend paid.

ASSESSMENTS.

Name of Company.	Location.	No.	Delinq.		Sale.		Amt.
Alta	Nev	60	Nov.	22	Dec.	20	.05
Alpha	"	21	"	28	"	19	.03
Best & Belcher	Nev	65	"	21	Dec.	13	.10
Belcher	"	59	"	9	Nov.	30	.10
Bullion	"	53	"	5	"	28	.05
Central Eureka	Cal	8	"	5	Nov.	28	.03
Chollar	Nev	47	"	15	Dec.	7	.10
Confidence	"	31	"	2	"	14	.10
Con. Imperial	"	41	"	15	"	6	.01
Con. New York	"	15	"	10	Nov.	30	.03
*Con. St. Gothard	Cal	.....	Dec.	14	.....		.10
Crown Point	Nev	75	Nov.	18	Dec.	9	.10
†Eureka C. Drift	Cal	14	Nov.	25	Dec.	11	.01½
†Golden Eagle	Nev	.....	.....		.....		.00½
Gould & Curry	Nev	85	Dec.	8	Dec.	29	.10
Great West. Q.	Cal	.....	Dec.	16	.....		.15
Junction	Cal	2	Nov.	7	Nov.	28	.03
Justice	Nev	63	Nov.	14	Dec.	5	.10
Leon	Cal	1	May	16	Dec.	1	.01½
Marguerite	"	11	Nov.	7	Dec.	5	.10
May Day	Utah	.....	Jan.	3	Jan.	22	.00½
Meteor	"	.....	Oct.	31	Dec.	6	.00½
Mexican	Nev	60	Nov.	22	"	13	10
Morgan (Mec'rs)	Utah	2	Dec.	12	Jan.	5	.03
Mt. Diablo	Nev	6	Nov.	3	Dec.	27	.10
National Con	Cal	4	"	1	Nov.	28	.10
Occidental Con	Nev	31	Dec.	3	Dec.	28	.10
Omaha Con	Cal	3	Nov.	12	Dec.	10	.50
Overman (New)	Nev	1	Dec.	14	Jan.	4	.05
Poto i	"	51	"	5	Dec	28	.10
Reward	Cal	7	Nov.	21	"	12	.002
Savage	Nev	96	"	3	Nov.	23	.10
Seg Belcher & Mides	Nev	22	Nov.	28	.....		.03
† Skagit Cumberland Coal	Wash.	5	Oct.	4	Nov.	31	.01¼
Snowflake	Utah	.....	Nov.	18	Dec.	5	.01
South Eureka	Cal	.....	Dec.	16	.....		.03
Sunbeam Con	Utah	19	Nov.	22	Dec.	10	.01
Teresa	Mex	19	"	3	Nov.	22	.05

* New assessment. † Former assessment rescinded.

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.			Dividends. Total Paid.	Dividends. Date and Amount of Last.		
1	Adams, s. l. c.	Colo.	$1,500,000	150,000	$10	*				$693,500	Oct.	1895	.04
2	Ætna Cons., q.	Cal.	500,000	100,000	5	*				150,000	Oct.	1898	.10
3	Alaska-Mexican, g.	Alask	1,000,000	200,000	5					299,031	July	1898	.10
4	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	*				3,550,000	July	1898	.37½
5	Alice, g. s.	Mont.	10,000,000	400,000	25	*				1,075,000	April	1898	.05
6	American Gold, g. s. c. l	Colo.	3,000,000	300,000	10	*				362,000	Oct.	1898	.09
7	Anaconda Copper	Mont.	30,000,000	1,200,000	25					8,250,000	Nov.	1898	1.25
8	Anchoria-Leland, g.	Colo.	600,000	600,000	1					168,000	Nov.	1898	.01
9	Argentum Juniata, g. s. l	Colo.	2,600,000	1,300,000	2	*				39,000	July	1895	.03
10	Associated, g.	Colo.	1,250,000	1,250,000	1	*				50,000	Nov.	1898	.01
11	Atlantic, c.	Mich.	1,000,000	40,000	25					780,000	Feb.	1898	1.00
12	Aurora, i.	Mich.	2,500,000	100,000	25	*				750,000	May	1898	.50
13	Bald Butte	Mont.	250,000	250,000	1	*				627,148	Oct.	1898	.03
14	Bangkok Cora Bell, s. l.	Colo.	600,000	600,000	1					107,510	July	1896	.01
15	Big Six, g. s.	Colo.	500,000	500,000	1					15,000	May	1898	.00½
16	Boston & M. Cons., g. s. c	Mont.	3,750,000	150,000	25	*				9,125,000	Nov.	1898	5.00
17	Breece, i.	Colo.	5,000,000	200,000	25					30,000	Dec.	1898	.05
18	Bullion Beck & Champ.	Utah.	1,000,000	100,000	10	*				2,308,400	Oct.	1898	.10
19	Bunker Hill & S., s. l.	Idaho	3,000,000	300,000	10					579,000	Nov.	1898	.07
20	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25					54,850,000	Sept.	1898	10.00
21	Cariboo, g.	B. C.	800,000	800,000	1					236,965	Aug.	1898	.02
22	Centen l-Eureka, g. s. l. c	Utah.	1,500,000	30,000	50	30,000	Mar.	1889	1.00	2,010,000	Mar.	1897	1.00
23	Central Lead, l.	Mo.	1,000,000	10,000	100	*				77,000	Nov.	1898	.50
24	Champion, g. s.	Cal.	340,000	34,000	10					296,200	April	1898	.25
25	Charleston, p. r.	S. C.	1,000,000	10,000	100	*				165,000	Sept.	1898	1.50
26	Colorado, Sm., g. s. c.	Mont.	1,000,000	100,000	10	*				1,595,000	July	1898	.50
27	** ‡ Cons. Cal. & Va.	Nev.	540,000	216,000	2½	678,000	July	1898	.25	3,894,000	Feb.	1895	.25
28	Coptis, g. s.	Nev.	10,000,000	100,000	100					77,000	Feb.	1895	.01
29	Crowned King, g. s. l.	Ariz.	6,000,000	600,000	10	*				208,000	Oct.	1898	.02
30	Dalton & Lark, s. l.	Utah.	2,500,000	2,500,000	1					87,500	Aug.	1896	.00½
31	Daly, s. l.	Utah.	3,000,000	150,000	20					2,925,000	Mar.	1897	.25
32	†Deadwood Terra, g.	S. D.	5,000,000	200,000	25	*				1,850,000	May	1898	.15
33	De Lamar, g. s.	Idaho	2,000,000	400,000	5					2,451,600	May	1898	.20
34	Della S.	Colo.	1,000,000	1,000,000	1					60,000	Jan.	1897	.10
35	Dutch, g	Cal.	1,500,000	150,000	10					39,000	Feb.	1898	.04½
36	Elkton Cons., g.	Colo.	1,250,000	1,250,000	1					636,961	Oct.	1898	.01½
37	El Paso, g. s.	Colo.	650,000	650,000	1					12,093	Jan.	1898	.01
38	Enterprise, s. l.	Colo.	500,000	500,000	1					900,000	Sept.	1898	.05
39	Empire State-Idaho	Idaho	1,000,000	100,000	10					35,000	Nov.	1898	.10
40	Fern.	B. C.	200,000	200,000	1					10,000	Jan.	1898	.05
41	Florence, s.	Mont.	2,500,000	500,000	5	*				137,530	Aug	1897	.01
42	Franklin, c.	Mich.	1,000,000	40,000	25					1,240,000	Jan.	1894	2.00
43	Galena, g. s. l.	Utah.	1,000,000	100,000	10					71,000	Jan.	1897	.05
44	Garfield-Grouse, g.	Colo.	1,200,000	1,200,000	1	*				24,000	Feb.	1897	.01
45	Geyser-Marion, g.	Utah.	1,500,000	300,000	5					96,000	Sept.	1898	.02
46	Gold Coin, g. s.	Colo.	1,000,000	200,000	5	*				160,000	Nov.	1897	.05
47	Gold Coin of Victor, g.	Colo.	1,000,000	1,000,000	1					120,000	Oct.	1898	.01
48	Golden Cycle, g.	Colo.	1,000,000	200,000	5					148,300	Oct.	1898	.02½
49	Golden Fleece, g. s.	Colo.	600,000	600,000	1	*				569,179	Feb.	1897	.01
50	Gold & Globe, g.	Colo.	750,000	750,000	1					51,625	July	1897	.00⅜
51	Golden Reward, g.	S. D.	1,000,000	100,000	10					155,000	Feb.	1898	.15
52	Grand Central, g.	Utah.	250,000	250,000	1					187,500	Nov.	1898	.12½
53	Hall Mines, Ltd.	B. C.	1,250,000	250,000	5					160,000	May	1898	.25
54	Hecla Cons., g. s. c. l.	Mont.	1,500,000	30,000	50	*				2,175,000	Feb.	1897	.50
55	Helena & Frisco, s. l.	Idaho	2,500,000	500,000	5	*				475,000	Aug.	1896	.04
56	Highland, g.	S. D.	10,000,000	100,000	100	304,000				3,764,718	Nov.	1898	.20
57	Holy Terror, g.	S. D.	500,000	500 600	1					117,000	Sept.	1898	.03
58	Homestake, g.	S. D.	12,500,000	125,000	100	200,000	July	1878	1.00	7,118,750	Nov.	1898	.50
59	Hope of St. Louis, s.	Mont.	1,000,000	100,000	10	*				762,252	Mar.	1898	.10
60	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25	*				5,210,000	Oct.	1898	.05
61	Idaho.	B. C.	500,000	500,000	1					264,000	May	1898	.05
62	Iowa, g.	Colo.	1,000,000	1,000,000	1					95,000	June	1898	.00½
63	Iron Mountain, g. s. l. i.	Mont.	5,000,000	500,000	10	*				507,500	April	1898	.02
64	Isabella, g.	Colo.	2,250,000	2,250,000	1					270,000	June	1897	.00½
65	Kearsarge, c.	Mich.	1,000,000	40,000	25	190,000	Oct.	1887	1.00	160,000	Aug.	1897	1.00
66	Kennedy, g.	Cal.	10,000,000	100,000	100					1,796,000	Aug.	1898	.48
67	Last Chance, s. l.	B. C.	500,000	500,000	1	*				40,000	Jan.	1897	.04
68	Le Roi.	B. C.	2,500,000	500,000	5					825,000	April	1898	.10
69	§§§Lillie, g.	Colo.	1,250,000	250000	5					146,110	Oct.	1898	.01
70	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	*				1,330,000	Nov.	1898	.05
71	Mayflower, g.	Cal.	1,200,000	60,000	20	6,000	Sept.	1898	.05	166,824	Dec.	1895	.10
72	Mercur, g.	Utah.	5,000,000	200,000	25	*				1,191,000	Oct.	1898	12½
73	Minnesota Iron, i.	Minn.	16,500,000	165,000	100	*				4,735,000	Oct.	1898	1.50
74	Modoc, g.	Colo.	1,000,000	1,000,000	1					110,000	Dec.	1898	.01
75	Mollie Gibson, s.	Colo.	5,000,000	1,000,000	5	20,000	Jan.	1891	.02	4,080,000	Jan.	1895	.05
76	Montana, Ltd., g. s.	Mont.	3,300,000	660,000	5	*				2,997 557	May	1898	.05‡
77	Montana Ore Purchas'g	Mont.	2,500,000	80,000	25	*				800,000	Oct.	1898	1.00
78	Moon-Anchor, g.	Colo.	600,000	600,000	1	*				261,000	Nov.	1898	.07½
79	Moose, g.	Colo.	600,000	600,000	1					186,000	Jan.	1896	.01
80	Morning Star, g.	Cal.	240,000	2,400	100	70,800	Feb.	1887	.75	666,600	June	1898	5.00
81	Mt. Rosa, g.	Colo.	1,000,000	1,000,000	1					60,000	Jan.	1898	.02
82	Mountain Copper	Cal.	6,250,000	250,000	25					93,750	Sept.	1898	.62½
83	Napa Cons., q.	Cal.	700,000	100,000	7	*				950,000	Oct.	1898	.20
84	New Idria Quicksilver	Cal.	500,000	100,000	5					80,000	Oct.	1898	.20
85	N. Y. & Hon Rosario, s. g.	C. A.	1,500,000	150,000	10	*				945,000	Oct.	1898	.10
86	North Star, g.	Cal.	2,000,000	200,000	10	20,000	June	1885	.02	500,000	Nov.	1898	.25
87	Ontario, s. l.	Utah.	15,000,000	150,000	100					13,557,500	Nov.	1897	.75
88	Osceola, c.	Mich.	2,500,000	100,000	25	*				2,522,500	Dec.	1898	2.00
89	Parrot, c.	Mont.	2,300,000	230,000	10	*				2,069,898	Oct.	1898	.30
90	Pennsylvania Cons.	Cal.	5,150,000	51,500	100	14,000	Feb.	1892	.05	46,500	Oct.	1898	.05
91	Pioneer g.	Cal.	1,000,000	100,000	10					50,000	Dec.	1898	.12½
92	Portland, g.	Colo.	3,000,000	3,000,000	1	*				2,167,080	Nov.	1898	.02
93	Princess, g.	Colo.	1,000,000	1,000,000	1	*				45,000	Feb.	1897	.00½
94	Quincy, c.	Mich.	2,500,000	100,000	25	*				10,120,000	Aug.	1898	3.50
95	Rambler-Cariboo	B. C.	1,000,000	1,000,000	1					40,000	April	1897	.02
96	Raven, g.	Colo.	1,500,000	1,500,000	1					20,000	Mar.	1898	.01
97	Reco, s. l.	B. C.	1,000,000	1,000,000	1					297,500	Jan.	1898	.10
98	Republic, g.	Wash	1,000,000	1,000,000	1					60,000	Nov.	1898	.03
99	Sacramento, g.	Utah.	5,000,000	1,000,000	5					57,000	Sept.	1898	.00½
100	St. Joseph, l.	Mo.	3,000,000	300,000	10	*				2,747,000	Sept.	1898	1.50
101	Santa Rosalia, g. s.	Cal.	100,000	100,000	1					125,000	Feb.	1898	.10
102	Silver King, g. s. l.	Utah.	3,000,000	150,000	20	3,000	Jan.	1897	.02	1,762,500	Nov.	1898	.25
103	Slocan Star.	B. C.	1,000,000	2,000,000	0.50					400,000	Mar.	1897	.05
104	Small Hopes, s.	Colo.	5,000,000	250,000	20	*				3,300,000	June	1898	.10
105	Smuggler Union, g. s.	Colo.	5,000,000	50,000	100					150,000	Oct.	1896	1.00
106	Smuggler, s. l. z.	Colo.	1,000,000	1,000,000	1					1,075,000	Oct.	1898	.01
107	South Swansea, s. l.	Utah.	150,000	150,000	1					104,960	Aug.	1898	.05
108	§Standard Cons., g. s.	Cal.	20,000,000	200,000	100					5,674,940	Aug.	1898	.10
109	Swansea, s. l.	Utah.	500,000	100,000	5					126,500	Nov.	1898	.05
110	Tamarack, c.	Mich.	1,500,000	60,000	25					5,330,000	June	1898	3.00
111	Tomboy, g.	Colo.	2,000,000	200,000	10	*				600,000	Dec.	1896	.10
112	Union, g.	Colo.	1,250,000	1,250,000	1					73,000	June	1896	.01
113	Union Leasing.	Colo.	500,000	500,000	1					340,000	July	1895	.04
114	Utah.	Utah.	1,000,000	100,000	10	*				177,000	Dec.	1897	.01
115	Victor, g.	Colo.	1,000,000	200,000	5	*				1,155,000	Dec.	1898	.50
116	Vindicator, Cons. g.	Colo.	1,500,000	1,015,000	1					137,875	Oct.	1898	.05
117	§§ War Eagle, Cons.	B. C.	2,000,000	1,750,000	1					151,500	Nov.	1898	.01½
118	Western Mine Enterp.	Mont.	500 000	500,000	1	*				48,680	Jan.	1898	.20
119	Whitewater.	B. C.	625,000	125,000	5					194,000	April	1898	.32
120	Wolverine, c.	Mich.	1,500,000	60,000	25	180,000	Mar.	1895	1.00	60,000	Oct.	1898	1.00
121	Yellow Aster, g.	Cal.	1,000,000	100,000	10	*				148,789	Oct.	1898	.10

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total Levied.	Assessments. Date and Amount of Last.		
1	Ada Cons., s. l.	Utah.	$100,000	100,000	$1	$3,333	Nov.	1895	.01½
2	Alamo, g. c. i.	Utah.	125,000	125,000	1	937	Mar.	1898	.00¼
3	Alliance, g. s. l.	Utah.	100,000	100,000	1	200,000	Dec.	1895	.10
4	Allonez, c.	Mich.	2,000,000	80,000	25	80,000	June.	1890	1.00
5	** Alpha Cons., g. s.	Nev.	105,000	105,000	1	316,050	Nov.	1898	.03
6	** Alta, s.	Nev.	216,000	108,000	2	3,664,910	Nov.	1898	.05
7	American Quartz, g.	Cal.	1,000,000	100,000	10	1,000	Feb.	1897	.01
8	Anchor, g. s. l.	Utah.	1,500,000	150,000	10	560,000	Aug.	1893	.20
9	** Andes, g.	Nev.	300,000	100,000	3	1,195,000	Sept.	1898	.05
10	Baliol, g.	Cal.	1,000,000	100,000	10	55,000	Mar.	1898	.30
11	** Belcher, s. g.	Nev.	312,000	104,000	3	3,514,800	Nov.	1898	.10
12	Belle Isle.	Nev.	10,000,000	100,000	100	240,271	July.	1896	.10
13	Benton Con. s.	Nev.	10,800,000	108,000	100	587,023	June	1897	.25
14	**Best & Belcher, g. s.	Nev.	302,400	100,800	3	2,589,643	Nov.	1898	.10
15	Bogan.	Utah.	1,250,000	125,000	10	26,875	Dec.	1897	.01½
16	Boston & Cp. Ck., g.	Colo.	400,000	200,000	2	20,000	Aug.	1898	.10
17	Brunswick Cons., g.	Cal.	500,000	500,000	1	160,000	July.	1897	.03
18	** Bullion, s. g.	Nev.	100,000	100,000	1	3,120,000	Nov.	1898	.05
19	Caledonia.	Nev.	300,000	300,000	3	3,210,000	ov.	1897	.10
20	Centennial, c.	Mich.	2,500,000	100,000	25	460,000	Mar.	1898	3.00
21	Central Eureka, g.	Cal.	4,000,000	400,000	10	78,000	Nov.	1898	.03
22	**Challenge Cons, s. g.	Nev.	150,000	50,000	3	427,500	May	1898	.10
23	** Chollar, g. s.	Nev.	336,000	112,000	3	2,048,000	Nov	1898	.10
24	** Confidence, g. s.	Nev.	74,880	24,960	3	540,126	Nov.	1898	.10
25	**Cons. Imperial, g. s	Nev.	500,000	500,000	1	2,246,000	Nov.	1898	.01
26	** Con. New York	Nev.	100,000	100,000	1	160,500	Nov.	1898	.03‹
27	** Crown Point, g. s.	Nev.	300,000	100,000	3	2,970,000	Nov.	1898	.10
28	Dalton, s. l.	Utah.	2,500,000	500,000	5	7,500	Sept.	1898	.00½
29	Dexter.	Nev.	1,000,000	200,000	5	30,000	Apr.	1898	.15
30	Eagle, g. s.	Cal.	500,000	100,000	5	5,000	Dec.	1896	.05
31	Eagle, g. s.	Ore.	1,000,000	100,000	10	6,000	Oct.	1898	.01½
32	Emerald.	Utah	300,000	300,000	1	3,000	Oct.	1898	.00⅜
33	Eureka Cons., g. s. l.	Nev.	1,000,000	50,000	20	585,000	Sept.	1898	.20
34	Eureka Con. Drift, g.	Cal.	500,000	500,000	1	172,500	Nov.	1898	.00½
35	** Exchequer, g. s.	Nev.	1000,000	100,000	1	1,020,000	Dec.	1897	.05
36	Four Aces.	Utah.	250,000	250,000	1	5,000	Mar	1898	.01
37	Galena.	Utah.	1,000,000	100,000	10	10,000	Oct.	1898	.10
38	Geyser, s. l.	Colo.	5,000,000	500,000	10	1,075,000	Aug.	1898	.10
39	Gold Belt, g. s.	Utah.	500,000	500,000	1	3,012	July.	1896	.00½
40	Golden Fleece Grav. g	Cal.	130,000	130	1000	56,260	Mar.	1897	2.00
41	Gold King, g.	Colo.	1,000,000	1,000,000	1	*			
42	** Gould & Curry	Nev.	324,000	108,000	3	4,614,350	Dec.	1898	.10
43	Great Eastern, g.	Utah.	1,500,000	300,000	5	5,000	Oct	1898	.00½
44	Hale & Norcross, g. s.	Nev.	11,200,000	112,000	100	5,688,280	Apr.	1898	.10
45	Horse Shoe Bar Cons.	Cal.	6,000,000	60,000	100	82,800	Aug	1898	.10
46	Idlewild, g.	Cal.	1,000,000	100,000	10	*			
47	Iron Silver, s. l.	Colo.	10,000,000	500,000	20	*			
48	Jackson, l.	Mich.	300,000	12,000	25	*			
49	Jupiter, g.	Cal.	2,000,000	20,000	100	80,000	Feb.	1898	.20
50	** Julia Con	Nev.	110,000	110,000	1	1,495,500	Feb.	1897	.05
51	** Justice, g. s. c.	Nev.	210,000	105,000	2	3,646,750	Nov.	1898	.10
52	Kentuck.	Utah.	600,000	300,000	2	3,000	Aug.	1898	.10
53	** Kentuck Cons., s.	Nev.	105,000	105,000	1	125,300	June.	1898	.05
54	Keystone, g.	Colo.	1,500,000	1,500,000	1	*			
55	Lacrosse, g.	Colo.	1,000,000	100,000	10	*			
56	Little Pittsburg.	Utah.	2,000,000	400,000	5	14,000	Dec.	1897	.00½
57	Lower Mammoth.	Utah.	150,000	150,000	1	15,000	Oct.	1898	.05
58	Lucky Bill.	Utah.	300,000	120,000	2.50	54,600	June.	1898	.01½
59	Marguerite, g.	Cal.	500,000	50,000	10	70,000	Nov.	1898	.10
60	May Day.	Utah.	100,000	400,000	¼	4,000	Jan.	1899	.00½
61	Mayday, g. s.	Cal.	50,000	50,000	1	5,000	May.	1898	.10
62	Mayflower, g.	Colo.	1,000,000	1,000,000	1	*			
63	Merced, g.	Cal.	1,500,000	100,000	15	200,000	July.	1896	2.00
64	Meteor, s. l.	Utah.	600,000	300,000	2	3,734	Oct.	1896	.00⅜
65	** Mexican, g. s.	Nev.	302,400	100,800	3	2,258,720	Nov.	1898	.10
66	Monarch, g.	Colo.	1,000,000	1,000,000	1				
67	Montreal.	Utah.	2,500,000	250,000	10	5,250	Nov.	1897	.00¼
68	Mt. Diablo s.	Nev.	5,000,000	50,000	100	145,000	Nov.	1896	.10
69	Nashville, g.	Cal.	115,000	11,500	10	2,000	Sept.	1898	.17
70	New Gold Hill.	N. C.	1,750,000	350,000	5				
71	New Viola, s. l.	Idaho	750,000	150,000	5	*			
72	North Banner, g. s.	Cal.	1,000,000	100,000	10	21,794	Oct.	1896	.02
73	North Belle Isle, s.	Nev.	10,000,000	100,000	100	523,074	July.	1896	.10
74	No. Gould & Curry.	Nev.	100,000	100,000	1	365,000	June.	1898	.10
75	Northern Light, g.	Utah.	2,000,000	400,000	5	80,000	July.	1898	.10
76	**Occidental Cons g s	Nev.	300,000	100,000	3	475,000	Dec.	1898	.10
77	** Ophir, g. s.	Nev.	324,000	108,000	3	4,602,568	Sept.	1898	.15
78	Opohonga.	Utah.	200,000	100,000	2	1,500	June.	1898	.01
79	Oro Cache, g. s.	S. D.	1,250,000	250,000	5	6,250	July.	1883	.00½
80	Osceola, g.	Cal.	10,000,000	100,000	100	10,924	Sept.	1898	.01
81	*** Overman, g. s.	Nev.	230,400	115,200	2	4,123,930	May	1898	.05
82	Peer, s.	Ariz.	10,000,000	100,000	100	215,000	July.	1894	.05
83	Peerless, s.	Nev.	10,000,000	100,000	100	410,000	July.	1894	.05
84	Pine Hill, g.	Cal.	1,000,000	100,000	10	30,000	July.	1895	.05
85	** Potosi, g. s.	Nev.	336,000	112,000	3	2,157,200	Dec.	1898	.10
86	Puritan, g. s.	Colo.	1,500,000	150,000	10	*			
87	Quicksilver, pref., q.	Cal.	4,300,000	43,000	100	*			
88	Quicksilver, com. q.	Cal.	5,700,000	57,000	100	*			
89	Red Mountain, s.	Colo.	300,000	60,000	5	22,500	Mar.	1891	.12½
90	Rescue, g.	Nev.	100,000	10,000	10	4,000	June.	1898	.10
91	Reward, g.	Cal.	64,000	64,000	1	63,680	Nov.	1898	.02
92	Ridge, c.	Mich.	500,000	20,000	25	239,939	Feb.	1897	1.00
93	St. Mary, c.	Mich.	1,000,000	40,000	25	4,000	July.	1895	.05
94	** Savage, g. s.	Nev.	280,000	112,000	2½	7,298,600	Nov.	1898	.10
95	Scorpion, s.	Nev.	100,000	100,000	1	445,000	Dec.	1897	.05
96	**Seg. Belcher & M g s	Nev.	200,000	100,000	2	368,000	Nov.	1898	.03
97	Sevier, g. s.	Utah.	1,250,000	250,000	5	50,000	April.	1897	.04
98	** Sierra-Nevada, g. s	Nev.	300,000	100,000	3	6,706,910	Feb.	1898	.20
99	Silver Age, g. s. l.	Colo.	2,000,000	200,000	10	*			
100	** Silver Hill, s.	Nev.	108,000	108,000	1	2,220,200	May	1898	.05
101	Silver King, s.	Ariz.	10,000,000	100,000	100	395,000	Oct	1898	.25
102	Silver Queen, c.	Ariz.	5,000,000	200,000	25	*			
103	Silver State, g.	Colo.	700,000	700,000	1	*			
104	Silver State, s. g. l.	Utah.	100,000	100,000	1	1,000	Sept.	1895	.00¼
105	Siskiyou Con., s.	Cal.	2,000,000	200,000	10	46,000	Apr.	1898	.01
106	South Fork Con.	Utah.	50,000	50,000	1	5,000	Mar.	1898	.01
107	Star, g. s.	Utah.	1,000,000	200,000	5	1,000	Mar.	1898	.00½
108	Sunbeam Cons.	Utah.	250,000	250,000	1	23,125	Nov.	1898	01
109	Tecumseh, c.	Mich.	1,000,000	40,000	25	40,000	July.	1895	1.00
110	Temonj, g.	Colo.	1,000,000	1,000,000	1				
111	Tetro	Utah.	300,000	300,000	1	15,000	June.	1897	.01
112	Tombstone, g. s. l.	Ariz.	12,500,000	500,000	25	*			
113	Tornado Con., g. s.	Nev.	100,000	100,000	1	*			
114	** Union Cons., g. s.	Nev.	250,000	100,000	2½	2,630,000	June.	1898	.15
115	** Utah Cons., s.	Nev.	100,000	100,000	1	470,000	Sept.	1898	.05
116	Victory, g. s.	S. D.	1,250,000	250,000	5	2,625	Nov.	1896	.00½
117	West Granite Mt., s.	Mont.	500,000	100,000	5				
118	Work, g.	Colo.	1,250,000	1,250,000	1				
119	World, g.	Colo.	1,500,000	1,500,000	1	*			
120	***Yellow Jacket, g. s	Nev.	360,000	120,000	3	5,788,000	May	1898	.20
121	Yellow Jacket.	Utah.	300,000	300,000	1	1,500	Dec.	1897	.00⅛

G., Gold. S., Silver. L., Lead. C., Copper. B., Borax. * Non-assessable. †The Deadwood previously paid $275,000 in eleven dividends and the Terra $75,000.
§Bodie, Bulwer and Mono transferred to Standard Cons., January, 1897. Previous to consolidation Bodie paid $1,677,572, Bulwer $190,000, and Mono $12,500.
** Capitalization reduced September, 1898. *** Reincorporated in September, 1898. §§ The old War Eagle Company paid $240,000 in dividends to July, 1897, and levied $32,500 in assessments.
§§§Lillie transferred to an English company in October, 1898. ‡Dividends paid since consolidation.

NOTE.—This table is corrected up to November 15. Correspondents are requested to forward changes or additions so as to reach us before the end of each month.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to Nov. 21st. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Review of Chemicals and Minerals.

	Cust. Meas.	Price.
Abrasives –		
Carborundum, f.o.b. Niagara Falls grains	lb.	$0.15
Powdered	"	.10
Corundum, N. C.	"	.07@.10
Chester	"	.04½@.05
Emery, Turkish flour	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	32.00
Pumice Stone, powdered	lb.	.02
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02
Lump, according to quality	"	.06@.18
Rouge	"	.17@.30
Tripoli, prepared	sh. ton.	12.00
Acids—Acetic, 30%	lb.	.06½@.07
Glacial, 99.5%	"	.21@.23
Benzoic, English	"	1.10
German	"	.50
Boracic, pure cryst.	"	.09½@.10¾
Powdered	"	.09¾@.10¾
Carbolic, cryst. in drums	"	.16
Chromic, com'l	"	.25
Pure	"	.35
Chem. pure	"	1.75
Hydrochloric, ch. pure	"	.08
Hydrofluoric, 30%	"	.03@.04½
48%	"	.05@.06
Best	"	.10@.12
Nitric, chem. pure	"	.10
Phosphoric, English, st. p	"	.24
Sulphuric, 98%	"	.02
Chem. pure	"	.07
Sulphurous	"	.05
Tartaric, cryst	"	.31½@.32
Powder	"	.32@.32½
Alcohol—94%	gal.	2.42@2.44
Refined wood, 95@97%	"	.75@.80
Purified	"	1.20@1.50
Alum—Lump	100 lbs.	1.65
Powdered	"	2.50
Ground	"	1.75
Chrome, com'l	"	3.25
Aluminum—		
Nitrate	lb.	1.50
Oxide, com'l	"	.20
Pure	"	.80
Chem. pure	"	1.00
Hydrated	"	.05
Sulphate, com'l	"	.01½@.01¾
Ammonia—Aqua, 16°	"	.02½@.03
18°	"	.03@.03½
20°	"	.03½@.04
26°	"	.05½@.06
Ammonium—		
Acetate, cryst	"	.65
Bromide, pure	"	.52@.53
Carbonate	"	.07¼@.07½
Muriate, gran. (100%)	"	.09½
Lump	"	.07¾@.08
Gray	"	.04½@.04¾
Nitrate, white, pure (99%)	"	.09
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05@.06
Powdered	"	.07@.08½
Oxide	"	.08½@.16
Sulphuret	"	.16
Arsenic—White	"	.04@.04½
Red	"	.07¼@.08
Asphaltum—		
Cuban, best	sh. ton	40.00
Common	"	18.00
Trinidad, refined	"	30.00
Gilsonite, Utah, ordinary	sh. ton	40.00
Select	"	60.00
Barium—Carbonate, lump, 92@94%	lg. ton	25.25
96@98%	"	29.00
Precipitated, 98%	sh. ton	38.00@45.00
Chem. pure	lb.	.10
Chloride, com'l	"	.02½@.03½
Chem. pure cryst	"	.05
Chlorate	"	.28
Nitrate	"	.06@.06¾
Nitrite, com'l	"	.05¾@.06
Oxide, com'l, hyd. cryst	"	.18@.22
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphide	"	.40
Barytes—Crude, No. 1	sh. ton	9.00@10.00
No. 2	"	8.00@8.25
No. 3	"	7.75@8.00
Prime White	"	12.00@15.00
American, floated	"	12.50@18.00
Foreign, floated	"	19.50@21.00
Bauxite—Georgia, f.o.b. cars, first grade	lg. ton	3.25@4.50
Second grade	"	3.00
Alabama, f. o. b. cars Rock Run	"	3.85
Benzole—90%	gal.	1.00@1.10
Bismuth—		
Oxide, hydr	lb.	2.25@2.65
Nitrate cryst	oz.	.09
Bitumen	lb.	.03½@.05
Bone Ash	"	.02¾@.03½
Borax	"	.06¾@.07¼
Bromine—Com'l	"	.45@.50
Cadmium—		
Sulphide	"	3.25@4.00
Metallic	"	1.90@2.00
Sulphate	oz.	.14
Calcium—Carbide, in ton lots, f. o. b. Niagara Falls, N. Y.	lb.	.03@.04
Carbonate, ppt.	"	.05
Chem. pure	lb.	.75
Sulphite	"	.05
Sulphide	"	.20
Cement—		
Portland, Am., 400 lbs.	bbl.	1.80@2.00
Foreign	"	1.75@2.50
"Rosendale," 300 lbs.	"	.75
Sand cement, 400 lbs.	"	1.85@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	"	.10@.10½
White	"	.11½@.13½
Chalk—Com'l, lump	sh. ton	2.00@2.10
Ppt.	lb.	.04@.04½
French	100 lbs.	.30@.35
Chromé Ore—		
(50% chrome) ex ship	lg. ton	24.50
Clay, China—Domestic.		
F. O. B. works	sh. ton	7.50@9.50
English, common	"	10.50
Best grade	"	18.00
Fire, ground, f.o.b. Jersey City, N. J.	"	4.00@5.00
Slip Clay, f.o.b. Albany	"	3.00
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide	"	1.60@1.70
Smalt, German	"	.15@.16
Sulphate	"	.85
Copperas	100 lbs.	.57½
Copper—Acetate, com'l	lb.	.16@.20
Carbonate	"	.15@.16
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, black	"	.30
Ppt., pure	"	.50
Red	"	.40
Ppt., pure	"	1.25
Cream of Tartar—crys.	"	.23¼@.23½
Granulated	"	.23¾@.23¾
Powdered	"	.23¾@.24
Cryolite	"	.08½
Explosives—		
Blasting powder, A	"	.08½
Blasting powder, B	"	.05@.05½
"Rackarock," A	"	.25
"Rackarock," B	"	.18
Judson R.R. powder, by carload	"	.10
Dynamite, (40% nitroglycerine)	"	.15
(50% nitroglycerine)	"	.17
(60% nitroglycerine)	"	.19
(75% nitroglycerine)	"	.23
Glycerine, for nitro (32 2-10° Be.)	"	.10½@.12
Nitro-Benzole	"	.14@.15
Feldspar—Ground	sh. ton	7.00@7.75
Flint—(See Silica).		
Fluorspar—Am. lump	"	7.00
Gravel	"	6.50
Crushed	"	6.00
Ground	"	11.00
Extra fine ground	"	12.50
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Graphite—(See Plumbago).		
Gypsum—		
Am. gr'd (terra alba)	sh. ton	7.00
Fertilizer	"	4.50
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—	"	20.00@.40.00
Iodine—Crude	100 lbs.	2.55
Resublimed	"	2.90@2.95
Iron—		
Chromate, powd	lb.	.03@.10
Muriate	"	.05
Nitrate, com'l	"	.01½
Pure	"	.04
Oxide	"	.02@.12
Scale	"	.01@.03
Sulphide (antimony slag)	"	.04@.06
Kaolin—(See Clay, China).		
Kanit	lg. ton	8.80@9.05
Kryolith—(See Cryolite.)		
Lead—Acetate	lb.	.05½@.06½
White, broken	"	.05½@.06
Com'l, broken	"	.07¼@.07¾
White, gran.	"	.06½@.06¾
Nitrate, com'l	"	.35
C. P.	"	
Lime—		
Bldg., ab. 250 lbs.	bbl.	.75@1.00
Hydrated	lb.	.02@.03
Magnesite—		
Crude, lump 94%	sh. ton	8.00
Calcined, foreign	"	25.00
Domestic	"	16.00
Magnesium—		
Metallic, ingots (Ger.)	kg.	5.95@6.90
Powdered (Ger.)	"	6.19
Ribbon or wire (Ger.)	"	10.00
Carbonate	lb.	.10
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Manganese—		
Crude, powdered, 73@75% binoxide	"	.01¼@.01¼
75@85% binoxide	lb.	.01½@.02½
85@90% binoxide	"	.02½@.03¼
90@95% binoxide	"	.03¼@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%	unit	.21@.22½
Sulphate, powdered	lb.	.25
Pure cryst	"	.40
Marble—Flour	sh. ton	8.00
Mercury—		
Bichloride	lb.	.57@.59
Bisulphate	"	.48
Red, ppt	"	.79@.81
White, ppt.	"	.84@.86
Mica—		
Ground	lb.	.04@.06
Sheets, according to size and quality.		
Mineral Wool—F. o. b. Stanhope, N. J.:		
Slag, ordinary	100 lbs.	1.00
Selected	"	1.67
Extra	"	4.00
Rock, ordinary	sh. ton	37.00
Selected	100 lbs.	4.00
Extra	"	7.00
Monazite—92%	sh. ton	140.00
Nickel—		
Oxide, black No. 1	lb.	1.00
Black No. 2	"	.60
Green, No. 1	"	1.00
No. 2	"	.60
Oils—Black, reduced 29 gr., 25@30%	gal.	.07@.07½
Black reduced 29 gr. 15 cold test	"	.08@.08½
Black reduced 29 gr. zero	"	.11@.12
Black reduced summer	"	.06½@.07
Smith's Ferry, 33@34 gr.	"	.07½@.08½
West Virginia, 29 gr.	"	.22@.24
Cylinder, dark steam ref	"	.08@.13
Dark filtered	"	.11@.16
Light filtered	"	.13@.15½
Extra cold test	"	.21@.25
Gasoline, 86°	bbl.	13.00@14.00
88°	"	15.00@16.00
90°	"	18.00@19.00
Neutral filtered, lemon, 33@34 gr.	gal.	.13@.18½
White, 33@34 gr.	"	.21@.23
Wool grade, 32 gr.	"	.11@.14
Naphtha, crude, 68@72°	bbl.	5.50
70°	"	6.00
Paraffine, high viscosity	gal.	.20@.25
23½@24 gr.	"	.08¾@.09
25 gr.	"	.07¾@.08
28@32 gr.	"	.06½@.07¾
Red No. 1	"	.08¼@.08¾
No. 2	"	.07¾@.08¼
Linseed, domestic raw	"	.32@.34
Boiled	"	.35@.37
Calcutta, raw	"	.54
Graphite, lubricating, Am. dry	lb.	.10
Lubricating, in oil	"	.12
Axle grease	"	.08½@.10
Wood grease	"	.05@.06
Ozokerite—		
Imported	"	.06@.08
Paints and Colors—		
Benzine, Samatra	"	.35@.40
Marbled	"	.27@.28
Chrome, green, common	"	.05
Extra	"	.14½@.15
Yellow	"	.13@.18
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack—Com'l	lb.	.03@.05
Refined	"	.08@.10
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd.	"	.05@.05½
English flake	"	.06¾@.07
Metallic, brown	"	.05½
Red	"	18.00@20.00
Ocher, American	sh. ton	8.00@15.00
Foreign, washed	lb.	.01¾@.05¾
Orange mineral, Am.	"	.07½@.08
Foreign	"	.08½@.10¾
Paris green, st. pure	"	.14½@.17½
Red lead, American	"	.05¾@.06
Foreign	"	.07½@.08
Shellac, D. C.	"	.28@.30
Native	"	.16@.17
Turpentine, spirits	gal.	.30@.30½
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14@.16
Quicksilver, bulk	"	.50
Chinese, best	"	.90
English, imported, best	"	.90
Artificial, best	"	.25
White lead, Am., dry	"	.04½@.04¾
In oil	"	.05½@.05¾
English, in oil	"	.07½@.08¼
Whiting, common	100 lbs.	.35@.40
Gilders	"	.45@.50
Zinc white, Am., ex. dry	lb.	.03¾@.04½
Foreign, red seal, dry	"	.07¾@.08½
Green seal, dry	"	.08¾@.09¼
Pitch—Coal tar	gal.	.08
Plumbago—American, pulverized, f. o. b., Providence, R. I.	sh. ton	25.00@40.00
Lump	"	8.00
German, lump	100 lbs.	.95
Pulverized	lg. ton	16.50
Ceylon, crude	lb.	.01¼@.01½
Pulverized	"	.02@.05
Potash—Caustic	"	.04½@.06
Potassium—		
Metallic, in balls (Ger.)	kg.	17.85
Bicarbonate cryst	lb.	.08½
Powdered or gran	"	.12
Bichromate	"	.09½@.09¾
Bromide, bulk	"	.44@.45
Carbonate, hydr	"	.04½
Chloride	"	.10
Chromate	"	.35
Cyanide (98@99%)	"	.28
Double manure salts, 48@53% (basis 48%)	100 lbs.	1.03
Muriate, 80@85% (basis 80%)	"	1.78
Permanganate, pure cr.	lb.	.16¼@.18
Chem. pure	"	.34
Silicate	"	.06
Sulphate, 90@95% (basis 90%)	100 lbs.	1.99½
Sulphide, com'l	"	.10
Chem. pure	"	1.00
Pyrites—		
Am. lump ore (basis 42%) f.o.b., Mineral City, Va.	lg. ton	3.25
Lump ore, f. o. b., Davis, Mass.	"	5.25
Fines, f. o. b., Davis, Mass.	"	4.25
Fines, f. o. b., Mineral City, Va.	"	2.75
Spanish, best	unit	.11@.13
Quartz—(See Silica).		
Saltpeter—Crude	lb.	.03½@.03¾
Double refined	"	.05@.06
Silica—		
Ground quartz	sh. ton	6.75@8.00
Best	"	12.00
Lump quartz	"	2.50@4.00
Silver—Chloride	oz.	.65
Nitrate	"	.41@.42½
Oxide	"	.85@1.10
Slate—Ground	lb.	.02@.03
Sodium—Metallic	"	.75
Bichromate	"	.07¾@.08
Bisulphite, com'l	"	.01¼@.02½
Bromide	"	.49@.50
Chlorate, com'l	"	.09¾@.10
Hyposulphite, com'l	100 lbs.	1.60
Nitrite	lb.	.07½@.07¾
Peroxide	"	.45
Silicate, Com'l	"	.01½@.01½
Sulphate, gran., purified	"	.03
Dried, powdered	"	.07
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—		
Carbonate, precipitate	"	.13@.14
Nitrate	"	.07½@.07¾
Talc—N. C. No. 1	sh. ton	15.00@15.50
No. 2	"	10.00@12.00
N. Y., Fibrous	"	8.00@9.00
French, best	"	20.00
Italian, best	"	20.00
Tin—Chloride	lb.	.11@.13
Crystals	"	.14@.14½
Oxide, white, ch. pure	"	.29@.25
Uranium—Oxide	"	2.00@3.00
Zinc—Metallic, ch. pure	"	.06¾
Absol. ch. pure (Ger.)	"	.60
Carbonate	"	.15
Chloride, gran	"	.05@.05½
Dust	"	.06¾@.08
Sulphate	"	.02@.02¾

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5.71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Boron—Amorphous, pure	grm.	.59
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Calcium—Electrol	"	4.28
Cerium—Fused	grm.	2.02
Nitrate (N. Y.)	lb.	28.00
Chromium—Fused	kg.	6.66
Pure powder	"	1.90
Chem. pure cryst	grm.	.19
Cobalt—(98@99%)	kg.	5.35@5.71
Pure	"	30.94
Didymium—Powder	grm.	3.81
Nitrate (N. Y.)	oz.	4.00
Erbium	grm.	3.09
Nitrate (N. Y.)	oz.	3.00
Gallium	grain	6.15
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	lb.	2.50
Indium	grm.	4.05
Iridium	"	1.19
Lanthanum—Powder	"	4.28
Electrol, in balls	"	9.04
Nitrate (N. Y.)	oz.	3.50
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Molybdenum—Powder	kg.	2.62
Fused, electrol	100 grms.	15.47
Niobium	grm.	3.81
Osmium	"	.83
Palladium—Sponge	kg.	428.06
Sheet and wire	"	761.40
Rhodium	grm.	2.87
Rubidium—Pure	"	4.76
Ruthenium—Pure	"	1.55
Selenium—Com'l powder	kg	26.18
Sublimed powder	"	35.70
Sticks	"	28.56
Silicium—Amorphous	100 grms.	2.87
Crystals, pure	"	7.14
Strontium—Electrol	grm.	6.19
Tantalum—Pure	"	3.57
Tellurium—Ch. p. sticks	100 grms.	11.90
Powder	"	9.52
Thallium	kg.	29.75
Thorium Nitrate 49@50% (N. Y.)	lb.	7.50@8.00
Titanium	grm.	.71
Uranium	"	.48
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.43
Wolfram—Fused	100 grms.	19.04
Powder, pure	kg.	2.38
Chem. pure	"	7.14
Yttrium	grm.	3.33
Nitrate (N. Y.)	oz.	4.00
Zirconium—Com'l	kg.	119.00
Pure	grm.	.71
Nitrate (N. Y.)	oz.	1.00

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